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HÆMATEMESIS AND MELÆNA: A SURVEY.

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For more than sixty years the treatment of gastrointestinal haemorrhage, particularly that arising from peptic ulceration of the stomach and duodenum, has been the subject of discussion amongst surgeons and physicians. Many weighty opinions have been given in favour of particular lines of treatment; the opinions of accepted authorities have often been quite at variance.

Finsterer in 1939 reviewed the position to that date, and stated that for twenty years prior to his review he had advocated early operation for hemorrhage from chronic ulcers, quoting a mortality rate of 4% for early resection in bleeding ulcer. In the 1930's there were many advocates of operation, and Finsterer quoted the main speakers at the Congress of the French Surgical Society in 1937, Papin and Willmorth, as being in favour of operation if the bleeding did not cease within forty-eight hours of blood transfusion. He himself has stressed the need for operation before the third day.

Meulengracht (1939), having achieved a mortality rate of 1%, concluded that with his medical régime operation was never indicated.

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The introduction of continuous drip transfusion by Marriot and Kekwick (1937) profoundly altered therapeutic thinking.

Avery Jones (1943) thought that operation might be considered in the treatment of patients with chronic gastric ulcer, particularly if they were aged over fifty years, or with recurrent bleeding or pain persisting after haemorrhage.

In 1946 Gordon-Taylor, having achieved a mortality rate of 5.5% by early operation, urged that operation be considered in the treatment of patients aged over fifty years, especially males with a known chronic peptic ulcer, particularly gastric ulcer. Further factors in favour of operation were a thickened, tortuous radial artery, severe pain before or pain consequent upon the bleeding, or recurrence of bleeding in a patient receiving adequate medical treatment. Mid-gastric narrowing and duodenal or pyloric stenosis were further indications for operation.

Hoerr, Dunphy and Gray (1948), from their experiences at the Peter Bent Brigham Hospital, adopted a different approach—namely, assessment of the rate of bleeding as the criterion for operation—and considered that operation should be advised for patients with severe syncope and shock who failed to maintain a stable circulation, despite continued blood transfusions of not more than 500 cubic centimetres every eight hours.

Avery Jones (1947) concluded, from a study of 687 patients admitted to hospital for gastro-duodenal haemor-

TABLE I
Total Series: Mortality Rate by Diagnosis.

Cause of Haemorrhage.	Males.			Females.			Total.		
	Total.	Died.	Mortality Rate.	Total.	Died.	Mortality Rate.	Total.	Died.	Mortality Rate.
Ulcer ..	162	18	11.1%	57	1	1.8%	219	19	8.7%
Other ..	105	8	7.6%	39	3	7.7%	144	11	7.6%
Total ..	267	26	9.7%	96	4	4.2%	363	30	8.3%

rhage, that emergency partial gastrectomy was indicated for those patients, particularly if aged over fifty years, with good clinical evidence of a chronic ulcer, who were free from medical complications, and who had a brisk recurrent haemorrhage after admission to hospital. Persistence of pain after admission to hospital and evidence of arteriosclerosis were further points in favour of operation.

With these considerations in mind, an attempt has been made to analyse the admissions for haematemesis and melena to the Royal Newcastle Hospital for the five-year period from July 1, 1949, to June 30, 1954.

In view of the pronounced differences in geographic, age, sex and seasonal incidence of peptic ulcer symptoms

life, and the 363 admissions are concerned with a somewhat smaller number of patients.

In conformity with Avery Jones (1952), only those fatal cases were excluded (a) in which death was due to a clearly unrelated disease, or (b) in which death followed operation performed as an elective procedure after the bleeding had ceased. However, no case was excluded in category (a), and only one in the latter.

The criteria for the diagnosis of peptic ulcer were as follows: (i) positive radiological findings within a reasonable period of months of the haemorrhage; (ii) previous positive radiological findings if the symptomatology appeared to be unaltered; (iii) a history strongly suggestive of ulcer extending over at least three months, even in the presence of negative radiological findings. This appears justified from experience at the gastro-enterology clinic, where positive radiological findings may be inconsistent in the presence of continuing symptoms.

TABLE II.
Admissions for Non-Ulcer Haemorrhage.

Diagnosis.	Admissions.	Died.
Gastritis ..	21	—
Portal cirrhosis ..	16	4
Carcinoma of stomach ..	12	3
? Trauma ..	1	—
Hiatus hernia ..	1	—
Haemophilia ..	1	—
Anaphylactoid purpura ..	1	—
Drug purpura ..	1	—
Chronic myeloid leucemia ..	1	—
Septicemia ..	1	1
? Infarcted small bowel ..	1	—
Rupture of aortic aneurysm into duodenum ..	1	1
Cerebral haemorrhage (no abnormality detected in stomach at autopsy) ..	1	1
Unknown (no bleeding point found at gastroscopy or autopsy) ..	1	1
"Not proven" ..	84	—
Total ..	144	(7.6%)

reported by various writers (Doll, 1952; Alsted, 1954; Lewison, 1950; Jamieson, 1947), these factors were also considered.

DATA.

The material for the paper consists of the in-patient notes of the Royal Newcastle Hospital, a large general hospital serving a highly industrialized area containing 200,000 people.

The hospital beds available in the Newcastle area number 4.5 per thousand people, a figure which is lower than that in many other Australian cities; it may give some idea of the availability of beds for these patients and may indicate the degree of severity of the condition demanding admission to hospital.

Only those cases are considered in which the patient was admitted to hospital with acute haematemesis or frank melena, or in a few instances, when these took place in a patient already in hospital. Patients admitted to hospital for anaemia, later shown to be due to a slow gastro-duodenal haemorrhage, are not included. Each period of hospitalization for a patient was considered separately, as it is held that each event constitutes a separate threat to

The Material.

In the period under review there were 363 admissions for haematemesis and/or melena, the patients comprising 267 males and 96 females. The total mortality rate for all admissions was 8.3%; for males it was 9.7% and for females 4.2% (Table I). It is noteworthy that sex appears to bear little relation to mortality in the non-ulcer group of patients.

The distribution of the various diagnoses in the non-ulcer group is seen in Table II. The majority of the "not proven" group were those cases in which there were negative radiological findings and a short or absent history of previous dyspepsia. Most of these would fit into the "acute lesion group" of Avery Jones (1947), which includes gastritis and acute gastric ulcer; but in this series gastroscopic examination was carried out infrequently. It was possible to follow the out-patient records of 13 of these patients for periods of several years; three were later found to have radiologically proven duodenal ulcers, and two gastric ulcers. However, as they represent a selected group of patients whose dyspeptic symptoms persisted, no conclusions can be drawn as to the long-term prognosis in the cases in which radiological findings were negative.

SEASONAL INCIDENCE.

Figure I shows the great monthly variation in incidence, which is not due to the variation in length of the months. The "trough" in the mid-year contrasts with the peak incidence in December and January. This variation in incidence during the year is present for both ulcer and non-ulcer hemorrhages and calls for some explanation. It may be that the majority of the non-ulcer group, which is largely composed of the "not proven" cases, is due to bleeding from acute ulcers precipitated by the same unknown factors as cause bleeding in the chronic ulcers. Another explanation is that these same unknown factors will predispose the subject to bleeding in any suitable lesion, be it gastritis, oesophageal varices or some other.

Further analysis of these figures shows that the maximum incidence of bleeding ulcer occurs in the period about Christmas and New Year, the two weeks from December 21 to January 4, during which the figure of 11 admissions per week contrasts with the total mean for the five years of 4.2 per week (Figure II).

It is of interest to compare these figures with those of Lewison (1950) from the Johns Hopkins Hospital, and of Jamieson (1947), who studied the incidence of ruptured ulcer in Glasgow. The former found the lowest incidence of bleeding peptic ulcer in July, with the highest figures in October and then May and December. Jamieson, however, found perforations uncommon in August, September and October and unduly common in December, and the highest daily rates occurred between December 26 and January 1. However, he concluded that "the December peak is not due to over-indulgence at the Christmas period".

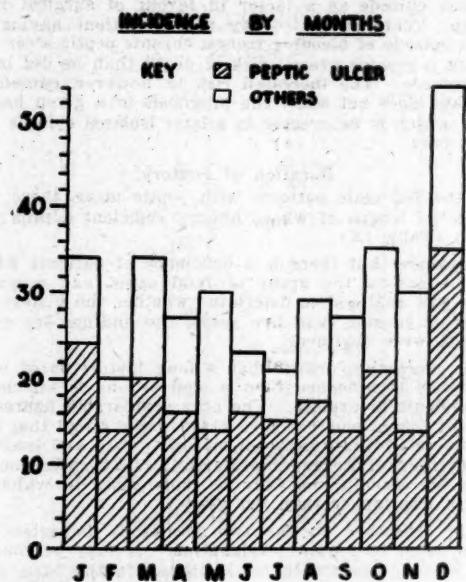


FIGURE I.

The only comparable Australian figures obtained were those of Linn (1946), who found that "attacks of severe peptic ulcer symptoms occur much less commonly in November, December and January", and in Adelaide he found that the peak incidence of symptoms occurred in May, June and July.

THE PEPTIC ULCER GROUP.

There were 219 admissions in the peptic ulcer group, the patients comprising 162 males (18 deaths) and 57 females (one death) (Table I).

Table III shows the incidence rising with age in males to a maximum in the sixty to sixty-nine years age group; in females the peak incidence is twenty years earlier, in the forty to forty-nine years age group. The figure may be compared with those of Ferguson and Wyman (1951), who found that in London the peak incidence in males is in the fifty to fifty-nine years age group, but in females there was a pronounced excess in the next decade.

The figures also confirm the great increase in mortality with advancing years in males, previously noted by many writers (Fraenkel and Truelove, 1955; Avery Jones, 1947; Ferguson and Wyman, 1951) (Table IV). Avery Jones (1952) found that sex had no appreciable effect on the mortality rate of bleeding peptic ulcer. However, in this series, although the numbers are relatively small, the mortality is so low that it seems fair to conclude that the mortality is lower in females and is little affected by advancing years—a finding contrary to overseas experience (Tables III and IV).

As the mortality rate for the two sexes is the same for non-ulcer haemorrhages, the difference may reside in an

inherent difference in the ulcers themselves in the two sexes, especially as the ratio of duodenal to gastric ulcer is virtually the same in the sexes.

Tables V and VI show the distribution of cases according to site of ulceration and sex. The 'stomach ulcer' group were those in which there was a history of previous gastroenterostomy or partial gastrectomy, and in which no other radiological lesion was found. Those in which the site was unknown or unspecified were those which fulfilled criterion (iii) for the diagnosis of peptic ulcer, or in which there was a history of a perforated ulcer, or a diagnosis of peptic ulcer had been made on a previous occasion elsewhere, the site being unknown.

Examination of these tables and of Figures III and IV reveals the following features: (i) The peak incidence of haemorrhage from gastric ulcer in males is ten years later than the peak incidence of haemorrhage from duodenal ulcer. (ii) In females, there is no distinct difference to be found in the age pattern of gastric and duodenal ulcers, but the numbers are too small for any firm conclusions to be drawn. (iii) As was noted above, the ratio of duodenal to gastric ulcer admissions is the same in both sexes. In Avery Jones's series (1947) there were in males more than twice as many duodenal ulcers as there were chronic gastric ulcers, whilst in females there was only a slight excess of duodenal over gastric ulcers.

ULCER HAEMORRHAGES INCIDENCE BY WEEKS -

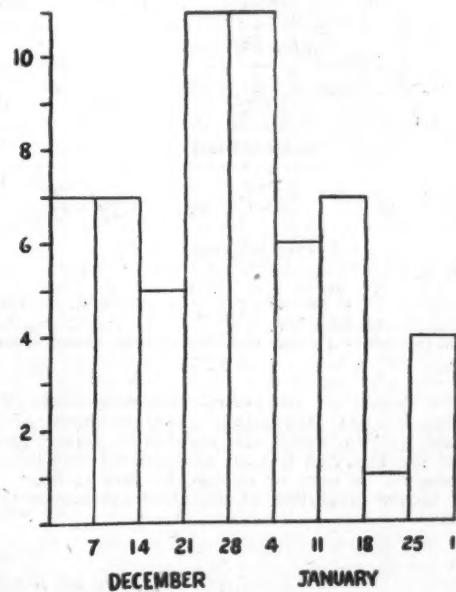


FIGURE II.

Mortality and Age in Males.

Our experience in the under fifty years age group is similar to that of British writers, and the mortality rate of 2.9% for this group is in accordance with other published figures (Table IV).

However, in the group aged fifty years or more the overall mortality is nearly one-third, rising from a low figure in the fifty to fifty-nine years age group to one-half in those aged over seventy years (Tables III and IV); the numbers are too small for percentages to be used. This rise in mortality with age has been generally ascribed to the higher incidence of degenerative changes, particularly

arterial disease, in the elderly. Lewin and Truelove (1949) have shown that chronicity and local changes in the ulcer are not important factors.

However, Table V shows the increasing proportion of gastric ulcers with their higher mortality with advancing years, and in the present series it seems that this is a factor to be considered. Avery Jones (1947) has pointed

TABLE III.
Peptic Ulcer: Age Incidence and Mortality.

Age (Years).	Males.		Females.		Total.	
	Total.	Died.	Total.	Died.	Total.	Died.
Present Series.						
0 to 19	2	—	—	—	2	—
20 to 29	5	—	9	—	15	—
30 to 39	36	1	12	—	48	1
40 to 49	26	1	17	1	43	2
50 to 59	40	3	10	—	50	3
60 to 69	42	8	7	—	49	8
70 and over	10	5	2	—	12	5
Total	162	18 (11.1%)	57	1 (1.8%)	219	19 (8.7%)
Avery Jones (1947).						
Total	411	34 (8.3%)	204	14 (6.9%)	615	48 (7.8%)
Ferguson and Wyman (1951).						
Total	103	23 (22.3%)	54	5 (9.2%)	157	28 (17.8%)
Thomas and Rees (1954). ¹						
Total	287	39 (13.6%)	99	7 (7.1%)	386	46 (11.9%)
Fraenkel and Truelove (1955).						
Total	262	16 (6.1%)	115	5 (4.3%)	377	21 (5.6%)

¹ With the inclusion of eight cases they excluded because of associated disease.

out the fallacy of comparing groups of cases without knowing the age distribution. This is shown in Tables III and VII, in which the apparently higher mortality rate of Ferguson and Wyman, as compared with this series, for example, is seen to be due, in part at least, to the much higher proportion of the older age groups in their series.

Influence of Previous Episodes.

An analysis of the admissions of male patients for bleeding chronic peptic ulcer in respect of previous episodes of bleeding or acute perforation is shown in Table VIII.

The difference is obviously not significant.

It follows that a history of a previous episode of bleeding or acute perforation has no influence on the prognosis in a given case, a finding previously made by Lewin and Truelove (1949) in respect of previous bleeding episodes. This point is worthy of emphasis. There is a tendency, expressed or implied, in some of the literature to regard a previous episode as a factor in favour of surgical intervention. This is not to say that a patient having his fourth episode of bleeding from a chronic peptic ulcer does not run a greater overall risk of death than he did in his first episode. The increased risk is, however, cumulative only, and does not affect the prognosis of a given hemorrhage, which is no greater in a later isolated episode than in the first.

Duration of History.

Of the 162 male patients with peptic ulcer, there were 148 of the length of whose history sufficient details were known (Table IX).

It appears that there is a deficiency of patients with a long history in the group of fatal cases, and when the group was analysed to determine whether the history was longer or shorter than five years, the findings set out in Table X were obtained.

The conclusion drawn that a long history is of better prognostic significance than a shorter one is unexpected and difficult to explain. The only comparable figures are those of Lewin and Truelove (1949), who found that there was no relationship between mortality rate and length of history, and of Burger and Hartfall (1934), who found a slight increase in mortality in those cases in which the history was longer than ten years.

This difference in the two groups is important and would seem to require explanation. It may be that the very chronic ulcer with much fibrosis in the base, which has become relatively avascular, will offer more resistance to the lytic action of the gastric secretions, and that the larger vessels associated with it have had a longer time to develop endarteritic changes.

Severity of Bleeding.

Hæmoglobin Level.

The severity of a gastro-duodenal hemorrhage is generally obvious at the bedside; but objective criteria to express such an estimate are virtually lacking. As Bennett *et alii* (1938) point out, blood volume estimations are the most accurate guide, but they were not carried out on this series. However, the hæmoglobin levels of the majority of the patients were obtained, and these were compared with an arbitrary level of 8.0 grammes per centum, a figure chosen as that below which transfusion is often necessary. Half the patients had a hæmoglobin level of less than 8.0

TABLE IV.
Mortality Rate in Relation to Age in Patients with Peptic Ulcer.

Age Group. (Years.)	Males.				Females.				Total.									
	Number.	Died.	Mortality Rate.			Number.	Died.	Mortality Rate.			Number.	Died.	Mortality Rate.					
			This Series.	Ferguson and Wyman. ¹	Fraenkel and Truelove. ²			This Series.	Ferguson and Wyman. ¹	Fraenkel and Truelove. ²			Avery Jones. ³					
Under 50	70	2	2.9%	5.6%	0.0%	2.9%	38	1	2.6%	6.7%	0.0%	106	3	2.8%	5.9%	0.0%	2.9%	
Over 50	92	16	17.4%	31.3%	10.3%	11.7%	19	0	0.0%	10.3%	5.7%	8.1%	111	16	14.4%	23.6%	9.7%	10.3%

¹ Includes all cases thought to be due to ulcer, acute or chronic.

² Chronic duodenal and gastric ulcer only.

³ Calculated from figures given by Avery Jones (1947).

grammes *per centum* at some stage, so that it appears that the series is not "loaded" with patients with mild haemorrhage.

Transfusion.

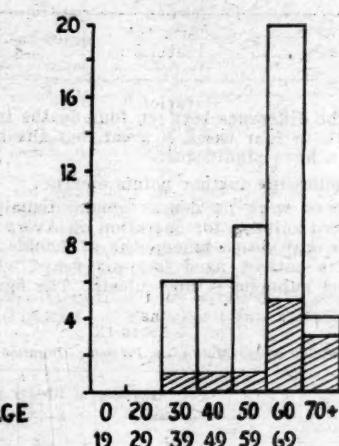
Of the 363 admissions for haemorrhagic episodes (all causes), 151 patients or 44.5% were given transfusions.

in mortality that is associated with recurrent bleeding in hospital.

Of male patients, only 5.2% of those without clinical evidence of recurrent bleeding died, whereas if bleeding recurred after the institution of treatment, more than one in four perished (Table XI). In females this effect was not seen.

MALES : GASTRIC ULCER

KEY : ADMISSIONS
 DEATHS



MORTALITY RATE 17% 17% 11% 25% 75%

FIGURE III.

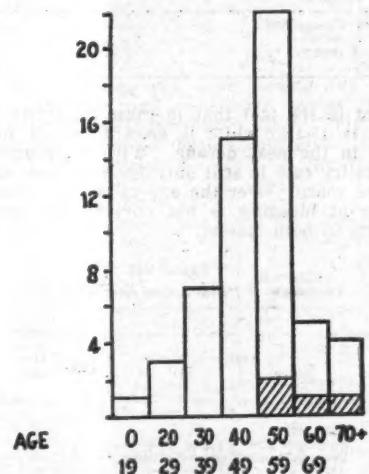
In the male peptic ulcer group 45% in all were given transfusions, 25% as an emergency measure and 20% as an elective procedure. Of those who died, 14 of the males and the sole female were given transfusions and four were not, either because the condition was not recognized or because death took place too quickly.

Recurrent Bleeding in Hospital.

Many authors, including Avery Jones (1947) and Lewin and Truelove (1949), have pointed out the great increase

MALES : DUODENAL ULCER

KEY : ADMISSIONS
 DEATHS



MORTALITY RATE 9% 20% 25%

FIGURE IV.

In female patients, although the mortality is so much less than in males, this is not because they are less prone to recurrent haemorrhage, which is, in fact, more likely—38.6% have recurrent bleeding as against 29% of male patients. It would seem in this series that the lower mortality in females may be intrinsic.

The effect on mortality rate of recurrent bleeding in males in the older age groups is shown in Table XII and

TABLE V.
Males : Peptic Ulcer—Site and Age.

Site of Ulcer.	Age Group (Years).							Total.
	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 and Over.	
Gastric : Number of cases ..	0	0	6	6	9	20	4	45
Number of deaths ..	0	0	1	1	1	5	3	11 (24.4%)
Duodenal : Number of cases ..	1	3	7	15	22	5	4	57
Number of deaths ..	1	3	2	2	1	1	1	4 (7.0%)
Stomal : Number of cases ..	0	1	4	1	1	4	1	12
Number of deaths ..	0	1	1	1	1	1	1	1
Unknown or unspecified : Number of cases ..	1	2	19	4	8	13	1	48
Number of deaths ..	1	1	1	1	2	2	1	2 (4.2%)

TABLE VI.
Females : Peptic Ulcer—Site and Age.

Type of Ulcer.	Age Group (Years).							Total.
	0 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 to 79.	
Gastric :								
Number of cases ..	1	2	5	5	2	1	1	15
Number of deaths ..	1	1	1	1	1	1	1	1
Duodenal :								
Number of cases ..	1	3	1	6	4	3	—	17
Number of deaths ..	1	1	1	1	1	1	—	1
Anastomotic :								
Number of cases ..	—	0	2	1	—	—	—	3
Number of deaths ..	—	—	—	1	—	—	—	1
Unknown or Unspecified :								
Number of cases ..	—	4	4	5	6	2	1	22
Number of deaths ..	—	—	—	—	—	—	—	—

is evident in the fact that in those aged fifty to fifty-nine years it is 15.4%, while it rises to 42.9% for recurrent bleeding in the next decade. Without recurrent bleeding the mortality rate is still only 7.1% in those aged sixty to sixty-nine years. Over the age of seventy years the effect of recurrent bleeding is not obvious, the mortality rate being 50% in both classes.

TABLE VII.
Percentage of Patients Aged Over Fifty Years.

Series.	Percentage of Patients Aged Over 50 Years.
This series	50.7
Ferguson and Wyman (1955)	67.5
Fraenkel and Truelove (1955)	59.2
Avery Jones (1947)	56.6

The Role of Surgery.

Fifteen patients underwent operation; 13 had partial gastrectomies, including one patient who had continued haemorrhage after gastrectomy and died after a higher gastrectomy. One patient had a gastrostomy for recurrent haemorrhage, no bleeding point being found, but bleeding ceased after operation. Finally one patient died during a laparotomy. Of the 15 patients subjected to operation, four died.

Eight of those operated on aged fifty years or more fulfilled the criteria for operation suggested by Avery Jones (1947); two died. Table XIII summarizes the details of

TABLE VIII.

Previous Episode or Not.	Lived.	Died.	Mortality Rate.
Previous episode ..	81	11	11.7%
No previous episode ..	63	7	10.0%

those patients who fell into that group of cases in which Avery Jones (1947) found an excessively high mortality rate with medical treatment and recommended consideration of operation. The overall mortality rate of 44% for medical treatment leaves no cause for complacency, and although the numbers are small, it would appear that in this group operation offers the patient at least as much chance of survival as conservative treatment, provided that those who are going to die can be selected. However, our experience is that such selection is very difficult. As will be shown below, only four of the 11 patients who died from a bleeding gastric ulcer could be considered for operation on Avery Jones's criteria. In the gastric ulcer

group the difference between four deaths in nine cases and no death in four cases is great, but the numbers are too small to have significance.

The following further points emerge:

1. There were no deaths among females in the group considered suitable for operation on Avery Jones's criteria, and the only death among the 57 female admissions was that of a patient, aged forty-six years, who had bilateral cavitated pulmonary tuberculosis. The figure of no deaths

TABLE IX.
Mortality among Male Ulcer Patients : Duration of Symptoms.

Outcome.	Duration of History in Years.			
	0 to 1.	1 to 5.	5 to 15.	15 and Over.
Survivors ..	14	59	34	26
Deaths ..	2	10	2	1
Mortality rate ..	12.5%	14.5%	5.5%	3.7%

in 19 admissions among females aged over fifty years is in contrast with figures obtained overseas. Avery Jones (1947) recorded a mortality rate of 14% in 56 admissions in a similar series; Ferguson and Wyman (1951) recorded

TABLE X.

Length of History.	Lived.	Died.	Mortality Rate. ¹
Less than five years ..	73	12	14.1%
More than five years ..	60	3	4.8%

¹ $\chi^2 = 4.4$. $P = \text{less than } 0.05$. The difference is statistically significant.

a rate of 3% in 23 admissions. In a series of 87 such admissions, Fraenkel and Truelove (1955) noted a 5.7% mortality rate.

2. All the deaths among the duodenal ulcer patients fell into Avery Jones's surgical grouping, but only four out of the 11 gastric ulcer deaths did so (Tables XIII and XIV).

Table XV bears out the point made by numerous previous writers, that gastric ulcer haemorrhage is more lethal than that arising in a duodenal ulcer, a trend even more pronounced in this series than in that of Avery Jones (1947), given for comparison; but the difference in mortality for the two sites in this series is not statistically significant.

Fatal Cases.

Table XVI shows a summary of the clinical features of the fatal cases of peptic ulcer.

Treatment.

In this series virtually all admissions were to a medical bed in the first instance, and no patient underwent operation without consultation between the surgeon and physician responsible. Treatment was on rather conventional lines and varied in details, as no one clinician was responsible for all patients. Most were having "Ulcer

An intragastric drip administration of fluids rich in protein through a Ryle's tube was often carried on for a few days; this provided 2100 Calories per day with 120 grammes of protein, and gave adequate fluid and nutrient requirements without disturbing patients who were, in general, rather well sedated. Sedation sufficient to produce a state of somnolence was regarded as an important point in the first few days.

TABLE XI.
Peptic Ulcer: Recurrent Haemorrhage and Mortality.

Recurrence of Haemorrhage after Admission to Hospital.	Number of Patients.	Number of Deaths.
Male patients ¹ :		
Recurrence of hemorrhage ..	47	12 (25.5%)
No recurrence of hemorrhage ..	115	6 (5.2%)
Female patients:		
Recurrence of hemorrhage ..	22	1
No recurrence of hemorrhage ..	35	0

¹ When admissions and deaths over the whole group are considered
 $\chi^2 = 18.2$, $P < 0.01$. The difference is highly significant.

I" diets within twelve hours of their admission, and virtually all within twenty hours.

All patients were examined soon after their admission by a clinical pathologist, who assumed full responsibility

TABLE XII.

Age Group. (Years.)	Total Male Ulcer Patients.	Recurrent Bleeding.		No Recurrent Bleeding.	
		Number.	Died.	Number.	Died.
50 to 59 ..	40	13	2	27	1
60 to 69 ..	42	14	6	28	2
70 and over ..	10	4	2	6	3

for intravenous therapy, and collaboration between clinician and pathologist was close. The tendency was towards slow intravenous transfusion of whole blood or packed cells, and a systolic blood pressure maintained in

TABLE XIII.
Patients Warranting Consideration for Operation (Avery Jones, 1947).¹

Treatment.	(I) Gastric Ulcer.		(II) Duodenal Ulcer.		(III) Both Sites.	
	Total.	Died.	Total.	Died.	Total.	Died.
Medical ..	9	4	6	2	16	7
Surgical ..	4	0	3	1	7	1
Combined ..	13	4	9	3	23	8

¹ Male patients (a) aged fifty years or more, (b) free of serious medical complications, (c) having recurrent bleeding after institution of treatment, (d) with good clinical evidence of ulcer: (I) known or later proved to be gastric, (II) known or later proved to be duodenal, (III) total includes Case 17, site not known. The numbers are too small for statistical analysis.

the region of 100 millimetres of mercury was not regarded with alarm; rather a period of hypotension was regarded as desirable, and patients were allowed to continue in a state of hypotension short of danger to life. No ill effects of this hypotension were noted. No effort was made to restore blood pressure to normal levels by transfusions, as it was recognized that when bleeding stopped blood pressure rose spontaneously.

TABLE XIV.
Fatal Ulcer Haemorrhages.

Site.	Male Patients.	Female Patients.
Gastric ..	11	1
Duodenal ..	4	—
Stomal ..	1	—
Unknown ..	2	—

Andreson and Meulengracht were among the first to advise liberal feedings and cautioned against the too liberal treatment of the hypotensive state. The former suggested the following as basic principles: (i) Clot formation must be encouraged. (ii) A lowered blood

TABLE XV.
Peptic Ulcer: Male Patients, Aged Fifty Years and Over.

Site.	Admissions.	Deaths.	Mortality Rate, Avery Jones (1947).
Gastric ulcer ..	33	9	27.3%
Duodenal ulcer ..	31	4	12.9%

¹ The difference is not statistically significant.

pressure must not be raised suddenly. (iii) Shock must be combated, but not over-treated. (iv) Peptic digestion of the exposed vessel must be prevented if possible.

Meulengracht in 1947 published the results of fifteen years' experience of his régime of liberal feeding, with reservation of blood transfusion for the very severe cases, and was able to report a mortality rate of 2.5% in 1031 cases of bleeding peptic ulcer.

More recently Miller reported 438 cases of upper gastrointestinal haemorrhage without a death from bleeding peptic ulcer, and stressed his belief in conservative management with no operation and the use of blood transfusion only for those cases in which it was life-saving.

A barium meal X-ray examination in the present series was carried out usually about a week after bleeding had ceased; but in some cases the patient was discharged from hospital with arrangements for this to be done as an outpatient; some patients failed to report back, and this factor accounts for some of those ulcers, clinically present, whose site was unknown.

DISCUSSION.

This series consists mainly of patients such as are seen in an average Australian city hospital; relatively few were transferred from smaller hospitals; of these only one (Case 14) died, and it is thought that the series is mainly unselected.

The rate of admissions per month is not constant, but varies widely, with a sharp peak in December. This excess of admissions for December was present in each of the five years reviewed, and was observed for both ulcer and non-ulcer haemorrhage. The excess of admissions occurs mainly in the two weeks from December 21 to January 4, and it is thought that alcohol cannot be freed from blame.

The poor prognostic significance of advancing years, noted by many previous writers, was seen in this series. In males aged under fifty years, the mortality rate of bleeding ulcer was 2.9%; above the age of fifty years it

TABLE XVI.
Summary of Fatal Cases.

Case Number.	Age. (Years.)	Sex.	Clinical Notes.	Operation Possible.
1	50	M.	Three-year history. Shocked. Sudden hemorrhage same day; death in spite of intraarterial transfusion. Autopsy: duodenal ulcer.	No.
2	62	M.	Admitted with hematemesis. Carcinomatosis. Death in two weeks. Autopsy: carcinoma of pancreas and two subacute gastric ulcers.	No.
3	72	M.	Unconscious on admission, transfused, died in twenty-four hours. Autopsy: large chronic gastric ulcer and pulmonary oedema.	No.
4	69	M.	Known ulcer. Hemorrhaged for three weeks and then died on thirty-fifth day, of bronchopneumonia. Autopsy: prepyloric ulcer.	Yes.
5	67	M.	Known ulcer in pyloric antrum. Died on fifth day of recurrent hemorrhage (autopsy).	Yes.
6	60	M.	Known duodenal ulcer. Hemorrhaged for two days in hospital and died on eleventh day of sudden massive hemorrhage from splenic artery. Autopsy.	Yes.
7	63	M.	Melena for one month before admission. Alcoholism. Recurrent hemorrhage and death on second day. Autopsy: chronic gastric ulcer.	Yes.
8	41	M.	Known gastric ulcer considered suitable for operation if condition improved. Died of recurrent hemorrhage on ninth day.	Yes.
9	35	M.	Known gastric ulcer. Laparotomy for ? leaking ulcer on second day. Huge gastric ulcer found. Gastrectomy followed by perforation of a higher gastric ulcer leading to subphrenic abscess, further hematemesis and death on thirty-second day (autopsy).	No.
10	55	M.	Known gastric ulcer. Awaiting operation. Gastrectomy and post-operative death.	Yes.
11	77	M.	Admitted moribund; "cardiac failure and pneumonia". Autopsy: bleeding gastric ulcer, duodenal ulcer and bronchopneumonia.	No.
12	70	M.	Known gastric ulcer with emphysema and chronic bronchitis. Hemorrhage ceased, but patient died in fifth week of pneumonia.	? No.
13	69	M.	Undiagnosed; patient died in a few hours. Autopsy: bleeding gastric ulcer.	No.
14	61	M.	Admitted with fractured pelvis and ruptured bladder. Hematemesis on fifteenth day and death from hemorrhage and hypostatic pneumonia. (Coroner's autopsy: ? site of ulcer.)	No.
15	78	M.	Known duodenal ulcer. Continued hematemesis and death (autopsy).	Yes.
16	54	M.	Known duodenal ulcer. Recurrent large hemorrhages, death during laparotomy on day of admission.	Yes.
17	62	M.	Dyspepsia two years, ? duodenal ulcer. Melena on fifth day and sudden massive hemorrhage and death on tenth day. No autopsy.	Yes.
18	74	M.	Operation for duodenal ulcer twelve years previously. Severe arteriosclerosis and Parkinson's disease. Hemorrhage ceased, inanition. No autopsy.	No.
19	46	F.	Known gastric ulcer with malnutrition and bilateral apical cavitation, ? tuberculosis. Never fit for operation; recurrent hemorrhage and death in fifth week. Autopsy.	No.

climbed steeply to 17.4%. In females this effect was not observed.

The next most important factor in prognosis is the presence of recurrent bleeding after the patient's admission to hospital; in males without recognized recurrent bleeding the mortality rate for ulcer was 5.2%; when bleeding recurred, the rate rose to 25.5%.

Importance must be attached to the site of ulceration. Whilst among males there was a slight excess of admissions for duodenal ulcer over those for gastric ulcer (1.3:1.0), there were nearly three times as many deaths from gastric as from duodenal ulcer, and in females there were no deaths from bleeding duodenal ulcer (Tables V and VI). This trend was present at all ages; in males the overall mortality rate for gastric ulcer at all ages was 24.4%, with a minimum of 17% in the thirty to thirty-nine years age group. In contrast, the overall mortality rate for bleeding duodenal ulcer was 7.0%, and there were no deaths among patients aged under fifty years.

The sex of the patient appears to play an important part in the outcome of bleeding peptic ulcer; the only death among females in the ulcer series was that of a patient aged forty-six years with a gastric ulcer complicated by malnutrition and pulmonary tuberculosis.

An unexpected finding was that the mortality rate appears higher among those with less than five years' ulcer symptoms than among those with a longer history. The difference appears statistically significant, but it is difficult to explain. It does, however, tend to nullify the argument often produced in favour of surgical treatment for a long-standing ulcer, that operation will save the patient from a fatal hemorrhage later on.

Whether the haemoglobin level is below 8.0 grammes per centum at any stage of the illness appears to have little prognostic significance.

It is thought that the pattern of bleeding peptic ulcer in this community may not be identical with that seen in the United Kingdom, although conclusions based on experience there tend to be applied *en bloc* here. It does seem that further studies of the Australian pattern are needed; the conclusions of Linn (1946) differed in some respects from those of this survey, and the incidence of hemorrhage by site of ulcer in one large Sydney hospital varies from these other two (Kinsella).

In the material under review, a patient who presents with a bleeding peptic ulcer is more likely to die if the following criteria are fulfilled: (a) the patient is a male; (b) the patient is aged fifty years or more; (c) the ulcer is a chronic gastric ulcer; (d) recurrent bleeding occurs following the institution of treatment; (e) the dyspeptic history is of less than five years' duration; (f) concurrent medical disease is present.

In view of the evidence presented, it is thought that the criteria for operation suggested by Avery Jones require modification before they are applied to a population such as the one under review. It is essential at the outset to know what is the mortality of elective surgery before operation is considered in the treatment of an elderly patient, debilitated by hemorrhage and its sequels.

The mortality of 241 elective subtotal gastrectomies at the Royal Melbourne Hospital in the period from 1947 to 1950 was 4.6% (Hurley, 1952). Although better figures have been published by individual surgeons (Tanner, 1.3%; 1954; Grayton Brown, 1.7%, 1951), it seems erroneous in considering the problem of surgery to regard the mortality rate of elective surgery as 1% to 2% when, except in special centres, the combined efforts of the surgical staff of a hospital cannot achieve this figure. It is thought, therefore, that a figure no lower than 5% should be regarded as a base line. Ivor Lewis (1946) has stated that no surgeon should attempt emergency gastrectomy for bleeding ulcers unless his elective gastrectomy rate is less than 5%.

For female patients, it seems obvious from the figures given that surgery, at least in the population studied, has no place—the combination of age and recurrent bleeding exerts no undue malign influence on the prognosis.

For male patients aged under fifty years, the place of surgery must be very small. In the age group fifty to fifty-nine years, in the absence of recurrent bleeding, the mortality rate of 3.7% is in favour of conservative management. The question of operation arises for those in this group with recurrent bleeding, as the mortality rate is 15.4%. For those beyond middle age who have suffered recurrent bleeding, it seems fair to assume that the basal gastrectomy mortality rate would be increased twice or three times, which leaves little to choose between the two methods. However, if the history is of less than five years'

duration, and if there are reasonable grounds for diagnosing gastric ulcer rather than duodenal ulcer—factors which worsen the prognosis—then it may seem reasonable to employ surgery in anticipation of lowering the overall mortality rate.

In all there were six male patients, aged from fifty to fifty-nine years, with recurrent bleeding from gastric or duodenal ulcer treated conservatively. None of the three with gastric ulcer died. Of the three patients with duodenal ulcer, one died—a patient with a three-year history; however, he was a very doubtful candidate for operation at any time after the recurrence of haemorrhage (Case 1, Table XVI). This would appear to weaken considerably what appears superficially to be a good case for surgical intervention in this group.

In the decade sixty to sixty-nine years the mortality rate of 7.2% among patients without recurrent bleeding leaves little scope for surgery. However, if bleeding recurs, the mortality rate is 42.9%. Among those with or without recurrent bleeding aged seventy years or more, the mortality rate is one in two; thus, in those patients whose condition allows it, operation may be the treatment of choice.

In all, there were 14 male patients, aged sixty years or more, with gastric or duodenal ulcer and recurrent haemorrhage, of whom seven died. One of these (Case 14) was not suitable for operation, so that there were six deaths in 13 patients on whom operation was feasible. It would seem reasonable, therefore, to anticipate that skilfully applied surgery may lower this figure.

Among those in whom previous gastrectomy or gastro-enterostomy has been performed, as Avery Jones has pointed out, the mortality from bleeding is so low that conservative treatment is justified, unless definite gastric or duodenal ulcer has been demonstrated. As autopsy in these cases revealed no deaths from acute ulcer or gastritis, operation seems to be contraindicated in these groups.

Tanner (1950) and Gordon-Taylor (1946) have reemphasized that operation, if it is to be undertaken, must be considered early, before the patient has been allowed to suffer a series of recurrent haemorrhages and the possible consequences, so that the surgeon is not presented only with the "hopeless" cases in which neither physician nor surgeon can achieve a satisfactory result.

Avery Jones (1947) and Illingworth (1953) have stressed the need for excluding from operation those patients with serious accompanying medical diseases, such as chronic bronchitis or emphysema. This is borne out in this series, in which, of the 19 patients who died of haemorrhage from an ulcer, at least 10 were unsuitable for any reasonable form of surgical intervention. Thus only nine cases in 363 are left in which operation might have succeeded where conservative treatment failed.

Nice judgement, long experience and a high degree of surgical dexterity are necessary if such patients are to be saved by surgery, without operation on so large a number of patients that the overall mortality nullifies the original gain. That operation has a place at all is not unanimously agreed upon (Meulengracht, Miller); but if it has, then the laying down of definite criteria for surgery must remain a pious hope rather than an established fact. It is worth stressing that virtually all the operations in this series were performed in the first three years of this survey. This hospital has now for four years employed a policy of treating haematemesis and melena without operation. It is hoped to make this the subject of a later paper.

SUMMARY.

Data are presented relating to a series of 363 consecutive admissions to hospital for haemorrhage from the upper part of the gastro-intestinal tract.

In male patients with peptic ulcer, factors adversely affecting the prognosis were as follows: (i) advancing age, particularly over fifty years; (ii) gastric ulcer; (iii) the presence of recurrent bleeding; (iv) a history of less

than five years' duration; (v) the presence of other diseases.

Female patients, although more prone to recurrent haemorrhage, appear to have a higher degree of immunity to it, and also to the effect of advancing years.

Emphasis is laid on the value of the conservative use of slow drip transfusion and adequate sedation.

If surgery has a place, then its use should be restricted to older male patients with recurrent haemorrhage. It may be the treatment of choice for recurrent bleeding from peptic ulcer in those aged sixty years or more.

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THE SURGICAL MANAGEMENT OF APPENDICITIS IN PREGNANCY.

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AMONG the clinical pictures of appendicitis, none offers more potential difficulty than appendicitis in pregnancy. Technical aspects may be a trial, unless the surgeon has been fortunate enough to deal with several patients. The findings here discussed are based on seven personal cases, and a review of 48 public patients from two obstetric hospitals in Sydney over a five-year period. Only when some special lesson exists will the history be detailed.

Personal Series.

Seven patients have been operated on since 1949. There were no maternal or foetal deaths, and no premature labours. One patient at term commenced labour four days after the McBurney operation. No wound was drained, but no history extended longer than forty-eight hours. In five patients the appendix was unruptured, and three of these had free opaque fluid in the peritoneum. One case was misdiagnosed. As the condition resembled Case XXII in history and findings suggesting pylitis, it was thought safer to intervene because of local tenderness. A normal appendix was removed. The general findings have been considered in the tables with the hospital series.

Anatomy.

A clear view of symptoms, and of the placing of the incision, depends on the changes in size of the uterus, vascularity, bowel position and abdominal muscles. The uterus is a pelvic organ in the first trimester. Care is needed to avoid manipulation when one is dealing with a pelvic appendix. After the third month, the caecum is progressively displaced upwards and outwards. By the sixth month it lies at the iliac crest level, unless some adhesion exists. At term, the appendix is usually about one and a half inches above this, but may be lower, or up under the liver, depending on its well-known variability of position. Similar changes occur in the small intestine. The ileum has become retro-uterine at term, and the jejunum lies both behind and above the uterus. If distension is present, it is initially epigastric, enlarging downwards over the uterus.

Equally pronounced changes occur in the anterior abdominal muscles. The *rectus abdominis* hypertrophies, and its outer edge occupies the same relative position to the umbilicus and the iliac spine as it does in the non-pregnant patient. The external oblique is no longer aponeurotic at the higher levels recommended for incision in late pregnancy. The Fallopian tubes hang festooned from the uterus, and the right tube occasionally presents when the peritoneum is opened. The large, thin-walled uterine veins of late pregnancy are to be carefully avoided.

Localization of Appendicitis in Pregnancy.

Localization may be less efficient than usual, and many reasons are advanced, from breakdown of adhesions by the lift sustained in pregnancy, to inadequate omental function.

Recognition.

The classical syndrome of appendicitis is less common as pregnancy advances. Parker made the point that the ill-defined history and findings may in themselves aid diagnosis. A previous attack of appendicitis, especially if

it has occurred before the pregnancy, is important; this was present in over one-third of the cases in this series (Table I).

Classical shift of pain was found in about a quarter of the cases. One important difference from previous reported findings is the maximum incidence in the second trimester. Most authors find a maximum incidence in the first trimester. The reason for this variation is unknown. Although constipation is apparently more common in the second trimester, this can be only a partial explanation.

TABLE I.
History (55 Patients).

History.	Number of Cases.
Classical shift of pain	13
Previous attacks	20
Trimester:	
First	12
Second	31
Third	10
Post-partum	2
Urine infection (history or findings): appendicitis at operation	6 ¹

¹ All in second trimester.

There was one negative feature worthy of record. Six patients with a history or findings of pylitis had a diseased appendix at operation (for example, Cases IV and XXXV). If a rise in pulse rate and local tenderness suggest a surgical condition, it would appear safer to explore the appendix.

Tenderness was present in all cases (Table II), but frequently in bizarre sites.

TABLE II.
Signs.

Sign.	Incidence.
Tenderness	55 patients.
Rise in pulse rate	24 patients.
"Heavy" breath	Frequent when looked for.

A rise in pulse rate and "heavy" breath were other common findings. The temperature and white cell count bore no constant relation to the state of either appendix or peritoneum.

Throughout pregnancy, appendicitis is to be differentiated from urinary infections and stasis, twisted ovarian cyst and postural pain. Ectopic gestation and salpingitis may be problems in early pregnancy and red degeneration in a fibroid tumour and accidental hemorrhage in late pregnancy. This last may be beyond the surgeon's experience, which emphasizes the need for cooperation in these cases. All patients should be examined in consultation with the obstetrician. The diagnosis of the conditions enumerated above is adequately considered in text-books. Post-partum appendicitis is initially diagnosed only by the vigilance of the obstetrician. There were two cases in this series, Case XXVII being fairly typical.

Decision for Operation.

The natural reluctance of obstetrician and surgeon to operate on a pregnant patient is scarcely supported by the experiences of the last five years, in this series at least.

The results are set out in the following tabulation:

Deaths:

Maternal: 0.

Fetal: 1.

Abortion or premature labour: 2 patients (appendix diseased in both).

Length of stay in hospital:

(a) Operation as primary treatment (Case XXXV): 9 days (limits 6 to 16).
 (b) Non-operative treatment attempted first: 12.7 days (limits 3 to 29).

No operation (mild cases): 14 patients.

Exploration should be undertaken in all cases of under forty-eight hours' duration, when the patient is fit for operation. Conservative management after that time should be more than usually cautious. If peritonitis is allowed to become established, abortion may follow, however skilled the subsequent treatment. There were no abortions in cases in which exploration revealed a non-surgical condition—for example, pyelitis. *Per contra*, when conservative treatment failed and operation became vital for survival, the patients had a stormy passage.

Operation findings in 41 cases are set out in Table III.

TABLE III.
Operation Findings.

Findings at Operation.	Number of Cases.
Appendicitis alone	24
Peritonitis, or free fluid, with appendicitis	11
Normal appendix	5
Abscess	1

Technique.

Tilting of the table on the right, or a bolster under the right side, causes the gravid uterus to fall away from the field of operation. The gridiron approach is recommended. There is no worry about strength of the healed incision when labour occurs. The wound is fairly safe if infected. When the incision is suitably placed, minor enlargement permits adequate exposure. Pressure from retractors and packs should be minimized.

Parallel Management.

Sedation and antibiotics are the keystones of management. A short-acting barbiturate (for example, "Seconal") should be administered after operation as a routine measure. Morphine is valuable, but must be used with caution to avoid vomiting. It should be unnecessary to give warning against the use of analgesics before the diagnosis is established.

When operation is performed in late pregnancy, it is desirable that the hospital should have first-class premature nursing facilities on hand (Case XXII).

Activity of the patient after operation should be advised a little more cautiously than is usually the case. After her discharge from hospital the patient should take life easily for some weeks (Case XLVII).

Appendiceal Abscess.

Drainage of the abscess at the appropriate time was the only treatment possible in Case XI, in which the abscess never became sufficiently quiescent to permit interval appendicectomy.

Prophylaxis.

Appendicectomy should be considered more readily in females, because of both the chance of sterility after peritonitis, and the risks of appendicitis in pregnancy. Constipation should be avoided in pregnancy.

Summary.

- Seven personal and 48 other cases of appendicitis in pregnancy are reviewed.
- The usual structural changes in pregnancy produce technical problems. The *rectus abdominis* hypertrophies, the caecum and small bowel change position, and the uterine veins become large.
- Localization of the inflammation was inefficient in 11 of 41 operation patients.

4. Appendicitis in this series was more frequent in the second trimester of pregnancy.

5. Recognition by ordinary clinical methods tended to be more difficult in these patients. Six with a history and findings suggesting pyelitis proved at operation to have acute appendicitis. Tenderness, the only universal sign, was frequently present in unusual sites.

6. Differential diagnosis is discussed. The obstetrician can help the surgeon by delineating uterine lesions—for example, accidental haemorrhage—before delivery, and later by a careful watch for evidence of post-partum appendicitis.

7. Operation is advised in all such cases of appendicitis of less than forty-eight hours' duration, an attitude justified by the results.

8. The patient should be tilted to the left side. A gridiron type of approach is recommended, situated according to the duration of pregnancy.

9. If operation is performed in late pregnancy, adequate premature nursing facilities should be available.

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Reference.

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Appendix.

CASE IV.—The patient, aged twenty-nine years, was twenty-two weeks pregnant. She was examined on September 1, 1948, having had generalized abdominal pain for three days with some diarrhoea. Sudden right abdominal pain had occurred six hours before her admission to hospital, becoming generalized again when she was admitted. Her local physician treated her for pyelitis because of right renal angle tenderness with the foregoing history. On examination of the patient, her pulse rate was 130 per minute, her temperature was 99.4° F. and she had a "heavy" breath. Her abdomen was rigid and tender, maximally in the right iliac fossa. Rectal examination revealed no abnormality. The haemoglobin value was 8.2 grammes per centum, the white cell count was 9850 per cubic millimetre and there was a pronounced "shift to the left" in the neutrophile cells. Microscopic examination of the urine revealed no abnormality. Excretion pyelography revealed delayed excretion on the right side with pelvic dilatation, the findings being consistent with pyelitis. Exploration was undertaken because of the history of shift of pain and persistent tenderness. Under ether anaesthesia ("open" method) a McBurney incision was made. Established general peritonitis with free pus was found, and the omentum in the right iliac fossa was oedematous. A gangrenous appendix lay in the paracolic gutter, passing up towards the liver. The appendix was removed, the stump was buried and the area was dusted with sulphonamide powder. The wound was closed without drainage. Pre-operative sedation consisted of the administration of one-quarter of a grain of morphine, and one hour after operation 1.5 grains of "Seconal" were given, the dose being repeated as necessary. Chemotherapy with sulphamethazine given intravenously and penicillin given intramuscularly was administered in adequate dosage. Progesterone in a dose of 20 milligrammes was given intramuscularly before operation, and its administration was continued daily. The post-operative course was stormy. The patient was cyanosed and suffered from ileus and right pulmonary atelectasis; but she slowly recovered and left hospital on the sixteenth day.

CASE XI.—The patient, aged twenty-two years, was admitted to a suburban hospital on June 13, 1949, when seven weeks pregnant; an appendiceal abscess was drained through a McBurney incision. At twenty weeks the abscess recurred, and further drainage occurred spontaneously. This episode was repeated at twenty-two weeks, with copious drainage of pus. At twenty-six weeks, when further abscess formation occurred, incision was necessary to establish drainage. After these four abscesses the patient went to term without further event.

CASE XXII.—The patient was thirty weeks pregnant, and was admitted to hospital on March 10, 1950, because of a history of pain in the right iliac fossa of three hours'

duration. She had vomited twice, and her bowels had been open three times. Her pulse rate was 92 per minute and her temperature was 98° F. Tenderness was elicited in the right side of the abdomen and in the loin. The provisional diagnosis lay between pyelitis and threatened miscarriage. Next day the pulse rate rose to 108 per minute and the temperature to 98.8° F., and tenderness became generalized. At operation an incision of the McBurney type was made, "Pentothal", cyclopropane and ether anaesthesia being used, and a perforated appendix two inches long was found. It was surrounded by oedema and fibrin, with a fecolith lying free; free faecal-smelling fluid was also present. The wound was closed around a peritoneal drainage tube, after insufflation of penicillin and sulphonamide powder. Sedation consisted of the administration of pethidine, 100 milligrammes, on the patient's admission to hospital, and phenobarbital, 0.5 grain twice a day. After operation one-eighth of a grain of heroin was given every four hours as necessary, with one-eighth of a grain of phenobarbital every four hours. The administration of penicillin and streptomycin was commenced on the second day after the patient's admission to hospital. No progesterone was given. Post-operative ileus was treated by standard methods. The drainage tube was shortened on the second day after operation. The patient's condition improved slowly, but recovery was complete. Fifteen days after the operation, meconium-stained liquor was passed *per vaginam*, and a premature infant was extracted by the breech five hours later. The infant left hospital after two and a half months' intensive care in the premature nursery.

CASE XXVII.—The patient had been confined ten days previously; on November 8, 1950, she had been suffering from increasingly severe abdominal pain for two days, which had begun in the left iliac fossa and had passed to the right iliac fossa. The pain was continuous, with exacerbations, and was accompanied by nausea. The patient's pulse rate was 88 per minute, and her temperature was 99° F. Tenderness and rigidity were present over the whole of the lower part of the abdomen, more so on the right. Both fornices were tender. Appendicectomy was performed, the organ being acutely inflamed. The patient was discharged from hospital in fifteen days.

CASE XXXV.—The patient was thirty weeks pregnant when she was admitted to hospital on August 16, 1952; she had had a "cold" four days previously. Pain had been present for three days in the lower part of the abdomen, settling in the right iliac fossa and increased when the patient passed urine. On examination of the patient, her pulse rate was 100 per minute and her temperature was 100° F.; tenderness was present in both iliac fossae, more so on the right. Microscopic examination of the urine showed it to contain three or four cells per high-power field and numerous motile organisms. Despite the urinary findings, the appendix was explored on the day of the patient's admission to hospital. The organ was filled with pus, and the related bowel and Fallopian tube were intensely congested. Penicillin and streptomycin were given. Labour commenced on the following day. The baby did not survive instrumental delivery with episiotomy.

CASE XLVII.—The patient, aged twenty years, was sixteen weeks pregnant when she was admitted to hospital on December 10, 1952. She had had a dull ache at the umbilicus for three days, passing to the right iliac fossa on the day before her admission. Her pulse rate was 84 per minute, and her temperature was 98° F. Tenderness with rebound was present in the right iliac fossa. Her tongue was clean. At operation an inflamed appendix was removed. The patient was discharged from hospital on the tenth day, after an uneventful convalescence. She was readmitted to hospital in the evening, having had a miscarriage, and was discharged five days later.

PSYCHIATRY IN GENERAL PRACTICE.¹

By FRANCIS W. GRAHAM,
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THE psychiatric conditions met with in general practice run the whole gamut of neurosis and mental disorder. It is therefore impossible to do more tonight than merely touch on some of the more important aspects of an admittedly large subject.

¹ Read at a meeting of the Australasian Association of Psychiatrists on October 26, 1955, at Canberra.

The medical problems facing the general practitioner are several. Firstly, there is the question of diagnosis; is the illness predominantly physical, neurotic or psychotic? Secondly, there is the question whether the doctor will undertake treatment himself or refer the patient to a specialist.

One hardly needs to emphasize the importance of a thorough physical examination, and whatever confirmatory investigation is indicated; one only has to think of the serious mental symptoms that may follow such conditions as uræmia, cardio-vascular disease, brain tumour, thyroid dysfunction *et cetera* to realize this.

When the physical contribution to the patient's illness has been assessed, the next step is to determine whether the patient is suffering from a neurotic condition or some form of insanity. The severe examples of the latter are pretty obvious; but early psychotic conditions may present considerable difficulties in differentiation from the neuroses. In these doubtful cases the patient is often looked upon as suffering from a mixed condition. For instance, he may be considered to have certain signs of schizophrenia, *plus* symptoms which are held to be hysterical in nature. What is not always realized is that these patients should be considered as fundamentally, at least, schizophrenic, as this latter is the more malignant aspect of the disorder and materially increases the likelihood of an eventual mental breakdown, with all the obvious signs and symptoms of a fully fledged psychosis.

The practitioner faced with these so-called mixed cases should realize that the patients need to be examined more frequently and over a longer period of time than the straightforward hysteric. This is apparent from the fact that a patient with domestic or business responsibilities may be suffering from the earliest stages of a condition which, if neglected, may render him more helpless than if he suffered from advanced rheumatoid arthritis.

At this point let me say a few words about the danger signs that should arouse suspicion of a developing schizophrenia. Pronounced fluctuation of mood that on careful history-taking cannot be related to definite events is an important indicator. Patients complain that their mood changes seem to come out of the blue, which was rare before the onset of the illness. There is one exception to this, and that is the patient with the cyclothymic personality who experiences mood changes apparently unrelated to reality. In this instance the mood swings occur at regular intervals, whereas the schizophrenic mood changes tend to be erratic and follow no set pattern. When mood changes are seen in hysterics, they are more closely linked to actual events and are usually appropriate in kind, though of exaggerated intensity. A history of horrifying dreams involving bodily disintegration, killing or being killed, and blood, is suggestive of early schizophrenia. These dreams usually occur before there is any loss of insight or of a sense of responsibility with regard to the many obligations that life imposes. If there is any defect in the two last-mentioned, then one can be sure that the disease process has passed its early stages and is already fairly advanced.

If these patients are examined fairly frequently over a period of a month or two, and encouraged to talk freely about every aspect of their problems, the physician is able to assess whether the condition is progressive and in need of psychiatric treatment. The sympathetic psychotherapy of these interviews is sometimes successful in arresting the process. Should this not occur, then the patient should be referred to a psychiatrist for consideration of the advisability of electroconvulsive or insulin therapy, or of psychotherapy.

One of the most dangerous conditions that is seen in general practice is what we may call the masked psychotic depression. It is dangerous because it is often difficult to detect. The classical psychotic depression, or melancholia, with its slowing up of thought processes, its reduction of psychomotor activity, generally unfounded ideas of unworthiness, pathological feelings of guilt and suicidal tendencies, is readily diagnosed and leaves no doubt that electroconvulsive therapy is needed immediately.

However, the masked variety is most commonly seen in middle-aged men of good organizing ability and often of the executive class. These persons frequently show no sign whatsoever of reduced psychomotor activity; they do not look depressed, and may not admit it, or may at least belittle it, even on being directly questioned. They may complain mainly of impotence, and it may easily be thought that their depression is due to this, whereas in fact the exact opposite is the case. A most important symptom in these persons is sleeplessness without any adequate physical cause. They may try to rationalize it by saying they have considerable business worries. But a careful history will reveal that their business worries in actual fact are no greater than, and are in no essential different from, what they were twelve months before. In fact, this recent "worrying" is a symptom of the condition. It is patients suffering from these symptoms who provide most of the cases of surprise suicides. They have often been treated for months with the complaint of "being run down" or "nerves". Electroconvulsive therapy is often as dramatically successful in these cases as it is in the classical melancholia.

It is important to distinguish psychotic from neurotic depression. Many patients suffering from neurosis complain of feeling very depressed. This latter type of depression has important distinguishing features, in that it only rarely leads to suicide and, unlike the psychotic variety, it does not respond to electroconvulsive therapy. Neurotic depression is often secondary to other persistent and distressing symptoms; it is not characterized by feelings of unworthiness and self-depreciation. The patient is more inclined to blame external circumstances for his plight. He is more apt to see the world as a place that demands too much of him, he feels he has much more than his fair share of burdens to carry, and has a constant tendency to ascribe blame to others rather than to himself. The physician should not allow himself to be too greatly influenced in his assessment of mental attitude by his own judgement that the environmental stresses are in fact unduly great. That the mental attitude in psychiatric cases is to a large extent independent of actual circumstances is confirmed by the occurrence of the opposite mental attitude of that just described—namely, profound feelings of self-blame—in circumstances in which one might think that the patient had grounds for blaming his environment.

Severe neurotic depression is usually difficult to influence, and sometimes requires treatment by an experienced psychotherapist.

Psychosomatic illnesses are often difficult problems in general practice. There is the ever-present question of just how much of the symptomatology is due to physical causes and how much is psychological. One is very often faced immediately with the added problem of how much further investigation to carry out. This is important from the point of view of establishing the doubtful diagnosis, and also has the disadvantage, in the case of suspected hypochondria, of confirming the patient's psychological symptoms. Here it is often best to rely on a clinical estimation, including a thorough physical examination, with a minimum of further investigations. If a patient is kept under observation for some weeks or months, then one is always able to decide on further investigation if necessary.

Psychosomatic problems are often considerably resistant to psychotherapy. It has become necessary for these patients to convert their mental conflicts into physical symptoms. The task thus confronting the physician is how to bring about a change in this state of affairs so that the patient can deal with his conflicts on a mental rather than on a physical plane. No doubt, even in these resistant cases frank discussion at frequent intervals of every aspect of a person's life often helps to a considerable degree. This approach is well worth trying before the patient is referred to a specialist in psychotherapy. However, the treatment of these patients is very time-consuming and requires in the physician a considerable interest in psychological difficulties.

General practitioners these days are usually so busy that they have neither the time nor the inclination to spend many hours with a patient with psychological difficulties. However, for those interested in the psychological problems of general practice, an excellent paper, "The Doctor, his Patient and the Illness", by Michael Balint, published in *The Lancet* of April 2, 1955, would well repay study. In psychotherapeutic discussions there should be neither an attitude of blame nor an attitude of acquiescence on the part of the physician, but rather an objective interest in whatever the patient is bringing forward. This does not mean a cold scientific attitude to matter that is obviously filled with emotional reaction. In fact, the physician who is in *rapport* with his patient will be capable of feeling something of the emotional reaction that is being experienced by the patient in whatever he is talking about. This attitude in the physician is something that is difficult to acquire if it is not already there in some measure. It is a quality which we call empathy. It is the result of the physician's own emotional development. However, it is a quality that exists more or less in everybody and can be cultivated particularly by some training in psychotherapy. Balint's paper describes a very interesting method of acquiring psychotherapeutic ability. Unfortunately in Australia we have as yet very poor facilities for training those physician who are interested. The practitioner is thrown back on his own resources in this country far more than elsewhere. However, with a few guiding principles he has any amount of material to work with and thus develop his own psychotherapeutic technique.

In this age of scientific precision the intuitive approach has not much respectability. But in matters psychological, when one is dealing with human beings rather than with conglomerations of bone, muscle and organs covered with skin, intuition is an important factor, and always will be, no matter how scientific we become. Those of us who are a little afraid to allow ourselves to be guided, in a controlled way, by our feelings should realize that nothing but good can come of developing psychotherapeutic technique consistent with our own personality traits. As long as our work is conducted always in an "atmosphere of unshakable friendly sympathy" (to borrow a phrase of Balint's), we need not fear any ill effects from our tentative approaches to problems that are often difficult to understand in their entirety—and more often than not we shall find that our endeavours have been worth while.

Asthma is a condition which well illustrates the complexities of the psychosomatic problem. Analytical writings of former years tended to describe asthma in psychodynamic terms of hysteria. More recently analysts have begun to recognize it more as a vegetative neurosis, or functional disturbance of the autonomic nervous system, and therefore a disorder at a deeper level of the psyche than that seen in conversion hysteria which involves mainly the voluntary nervous system.

Some cases of "asthma" encountered in out-patient clinics are rightly regarded as hysteria, but in these there is an hysterical imitation of difficult breathing. There is no reduction of vital capacity, which is characteristic of the bronchospasm of true asthma.

Causative factors in bronchial asthma are psychological, allergic, infective and inherited. Two or more of these are probably necessary to produce attacks. We see cases that vary in frequency and severity according to environmental stress—for example, business men whose attacks are influenced by the stock market or domestic difficulties. These stresses reactivate unresolved mental conflicts. Again, we sometimes see children with superior psychological adjustment who get severe attacks of asthma with upper respiratory infections, and whose condition responds rapidly to antibiotics. However, most childhood asthma is intimately related to disturbed emotional situations in the family circle.

Thus the physician's task would seem to be to establish, as accurately as possible, on the basis of a painstaking history, the main causative factor, and make that the central point of his therapeutic endeavours. At the same

time he may be protected from the temptation to a *furor therapeuticus* by the knowledge that a psychosomatic symptom often has a protective function. It may protect the patient against a greater suffering.

As an example, I recently examined a male patient who had suffered for many years with colitis. He was in psychotic depression with suicidal impulses. While depressed he had no colitis. This, however, returned when his psychotic depression cleared up.

Alcoholism is a frequent problem in general practice. Fortunately, most cases are easy to diagnose, though perhaps not so easy to handle. Once again, one sometimes strikes difficulties in diagnosis with patients of superior intelligence. It is almost axiomatic that one can place little reliance on what an alcoholic tells one about his intake of alcohol. Frequently there is no sign of mental deterioration, but there is a steady, quiet denial that alcohol is playing any part in his troubles. He is often affected in mood only; in certain settings he may become nasty, belligerent, pathologically jealous and sometimes paranoidal. There may be no sign of any of these in his discussions with the doctor. The essential information may come mainly from relatives. However, the heavy spirit drinker usually carries diagnostic hints on his face. Should one's patient present a haggard, weather-beaten countenance when there is little evidence of his having been out in the weather, one may well be suspicious. The skin of the face is dull, darkish grey, and there is sometimes a bronze-like discolouration showing through. The face of the chronic beer drinker is different—it tends to be soft, fat, flabby and florid.

The treatment of alcoholism is too big a subject to discuss now. However, one should not forget that Alcoholics Anonymous has done a great deal for many of its members. There is often great difficulty in inducing patients to take an interest in it. It seems that many have to strike rock bottom before they turn to Alcoholics Anonymous.

Treatment will vary according to whether the alcoholism is occurring in a psychopathic personality or as part of a depressive episode or as part of a schizophrenic breakdown; the last-mentioned, in my opinion, is more frequent than is generally thought.

To conclude, I should like to emphasize the importance of the fact that the general practitioner is usually the first to come in contact with neurotic and early psychotic conditions. This throws upon his shoulders a big responsibility, because a favourable prognosis often depends upon an accurate early diagnosis. There are now many different methods of treatment in psychiatry, and each has its own indications. If psychiatry is to maintain the medical ideal of prevention, then we must rely more and more on the psychiatric training and psychological acumen of the general practitioner.

Reports of Cases.

HYPERCHLORÆMIC RENAL ACIDOSIS WITH OSTEOMALACIA AND HYPOKALÆMIA.¹

By GEORGE V. HALL,
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HYPERCHLORÆMIC renal acidosis of the Albright type is a rare disease, but it is an important one because of the profound disturbance of metabolism which may occur.

A knowledge of the mechanism by which these metabolic disturbances are brought about is often of value in the consideration of more common renal disorders, and indeed in electrolyte imbalance in extrarenal disease.

¹ This patient was shown at a clinical meeting of The Royal Australasian College of Physicians on May 14, 1955, at the Royal Prince Alfred Hospital.

The basic lesion of hyperchloraemic renal acidosis is bicarbonate loss due to renal tubular dysfunction.

In recent years a number of genetically determined disorders have been found to involve changes in renal tubular function; these may be set out as follows:

1. Acid-base regulation; infantile renal acidosis (Lightwood type); hyperchloraemic nephrocalcinosis (Albright type); de Toni-Fanconi-de Bray syndrome; Liguori-Fanconi syndrome (cystinosis).
2. Glucose reabsorption; renal glycosuria; cystinosis.
3. Amino-acid reabsorption; de Toni-Fanconi-de Bray syndrome; cystinosis; cystinuria.
4. Phosphate reabsorption; vitamin D-resistant rickets.
5. Base reabsorption not due to adreno-cortical disturbance; "salt-losing" nephritis; a sodium chloride losing condition found in infancy; hypocalcaemia in cystinosis.
6. Water regulation, not due to pituitary dysfunction; pitressin-resistant diabetes insipidus.

In the present case it is possible that the disorder may have been acquired, as there is a history of pyelonephritis treated with sulphonamides, and the damage may have resulted from infection or crystalluria.

Clinical Record.

Mrs. B., aged thirty-two years, presented in March, 1953, complaining of the following symptoms: weakness of the legs and a limping gait present for eighteen months to two years; inability to bend her hips properly or lift her feet clear of the ground after sitting for any length of time; heaviness of the legs and liability to fall after walking; inability to rise from the lying position without using her hands to force herself up; pain in the groins and thighs and shoulders; gross swelling of the right knee for a short period; polyuria with nocturia of three years' duration.

On examination the patient was found to be a thin young woman looking much older than her stated age. Her general muscular condition was poor. She walked with a waddling gait. The right leg was weak and there was half an inch of wasting in the right mid-thigh. A lesser degree of weakness was present in the left leg. Muscular involvement on both sides affected mostly the *gluteus medius*, but also the *psoas*, *quadriceps* and *hamstrings*. Full examination of other systems revealed no abnormality. The urine was normal.

The patient was fully investigated at this stage, mainly from the point of view of ataxia and possible muscle or nervous disease. Full investigation, including X-ray examination of the chest and skeleton, revealed no abnormality. It was thought that she might be suffering from some type of muscular dystrophy or from a myopathic condition associated with occult malignant disease. An occult primary neoplasm was sought, but no trace of one was found.

The patient then returned to the country and came back again in September, 1954. Increasing weakness was present and she had had amenorrhoea for eighteen months. Pain was present on both sides of the chest. These were the only other developments from the symptomatology mentioned earlier.

Examination of the patient revealed an increase in general weakness and further considerable loss of weight. There was muscular weakness of the same distribution as that mentioned above, but it was more pronounced. Examination of the urine revealed a trace of albumin, and the urine contained Bence-Jones protein. It was thought at this stage that in view of the finding of Bence-Jones proteinuria the condition was due to multiple myeloma. However, the plasma protein content was normal. No abnormality was detected in the blood, such as rouleaux formation or a grossly raised sedimentation rate, and finally a bone marrow biopsy revealed no evidence of multiple myeloma.

A renewed research was made for primary malignant disease, but the result was again negative except for the fact that X-ray examination of the chest revealed multiple

TABLE I.
Relevant Laboratory Findings.

Blood Chemistry.	Renal Function.	Serum Electrolyte Contents.
Serum calcium content, 8.2 milligrammes per 100 cubic centimetres. Serum phosphorus content, 2.3 milligrammes per 100 cubic centimetres. Serum alkaline phosphatase content, 12.2 King-Armstrong units.	Blood urea content, 47 milligrammes per 100 cubic centimetres. Urea clearance, 47% of normal. Urea concentration—maximum concentration in specimen less than 100 cubic centimetres, 1.2%.	Serum sodium content, 148 millequivalents per litre. Serum potassium content: 8.11.54, 4.8 millequivalents per litre. 8.11.54, 3.2 millequivalents per litre. Whole blood chloride content, 107 millequivalents per litre (serum chloride content, 124 millequivalents per litre). Carbon dioxide combining power, 36 volumes per centum.

symmetrical fractures of the ribs with the fragments lying in apposition. Because of this finding a full X-ray examination of the skeleton was carried out and further symmetrical pseudo-fractures were detected in the pelvis, through the rami of the pubis and the ischium. No definite abnormality was detected in the skull, spine and other bones except for a degree of generalized decalcification. The serum calcium and phosphorus figures were then noted. The first serum calcium figure was somewhat low, and subsequently serum calcium readings were normal. The serum phosphorus content was within normal limits, as was also the serum alkaline phosphatase content. The urine again was found to contain traces of albumin at times, but on other occasions was quite normal. A full investigation of renal function was carried out, and revealed considerable impairment of renal function. The blood urea level was slightly raised on one occasion, but was normal on a subsequent occasion. However, the urea concentration test and the urea clearance test revealed pronounced impairment of concentration and clearing power of the kidneys. An excretion pyelogram showed small areas of calcification in the kidney consistent with the appearance seen in calcification of the tubules. The serum electrolyte levels were then investigated. The patient was found to have a very low carbon dioxide combining power and a raised serum chloride level. The serum sodium and potassium levels were within normal limits except on one occasion when the serum potassium level was somewhat low. (See Table I for relevant laboratory findings.)

A biopsy from one of the involved ribs revealed decalcification consistent with osteomalacia. Other investigations were carried out which were thought to be possibly relevant to the case. These included estimations of the phosphate and amino-acid contents of the urine and a glucose tolerance test. They gave results within normal limits. As a result of full investigation it was concluded that the patient was suffering from hyperchloraemic renal acidosis. Associated with the renal acidosis was osteomalacia, giving rise to symmetrical pseudo-fractures throughout the skeleton. (Milkman's syndrome.) It was noted that nephrocalcinosis was associated with the renal condition.

When the diagnosis had been established, the following regime of treatment was carried out. The patient was given eight grammes of calcium lactate per day by mouth. Calciferol was administered in a dosage of 150,000 units per mouth per day for three weeks, and then 50,000 units per day. Alkalizing treatment for renal tubular acidosis as recommended by Albright was given with the following mixture: citric acid 140 grammes, sodium citrate 25 grammes, potassium citrate 25 grammes, water to one litre. The dosage was 30 cubic centimetres five times a day for three weeks, then 30 cubic centimetres three times a day.

The response to therapy was dramatic. Within six weeks the patient had lost her weakness and weariness and felt well. Radiological examination showed that the fractures were healing, and the serum electrolytes had been restored to normal levels. However, there was little change in the results of renal function tests at that time or when they were repeated six months later.

Twelve months later the patient still felt well.

Discussion.

One of the outstanding characteristics of this case is the osteomalacia.

In renal disease there are two types of osseous lesion which may arise. Firstly, in azotemic chronic renal failure with phosphate retention, secondary hyperparathyroidism may arise, giving rise to a form of *osteo fibrosa cystica*. Secondly, osteomalacia may occur, as in the present case, owing to renal acidosis. The other outstanding feature and initial symptom in the case under discussion was the muscular weakness leading to a waddling gait and generalized weakness. There seems little doubt that this was due to potassium deficiency, despite the fact that low potassium levels were not demonstrable except on one occasion. This hypokalaemia is a feature of the syndrome of hyperchloraemic renal acidosis and is due to loss of fixed base.

In hypokalaemia there is no constant relation between the serum potassium level and the site or extent of the paralysis or even its occurrence. In cases of periodic paralysis associated with hypokalaemia, if there is no family history a renal lesion should be suspected and investigated. Apart from familial periodic paralysis, in which it is presumed that there is movement of potassium into cells, hypokalaemic paralysis has also been noted in the recovery phase of diabetic coma, thyrotoxicosis, porphyria, the diuretic phase of acute tubular necrosis, uretero-colic anastomosis, sprue, and Addison's disease over-treated with desoxycorticosterone acetate. It also occurs in renal tubular defects associated with acidosis, as the case described above, and in the inborn error of cystinosis and in potassium-losing nephritis of the azotemic type; recently it has been described in primary aldosteronism.

Clinically there is an acute onset of flaccid paralysis, which commonly affects primarily or solely the extensor muscles of the limbs. The bulbar and respiratory muscles are usually spared, and there is no sensory loss.

In cases of hypokalaemia due to excessive urinary potassium loss, but in which a normal high serum bicarbonate level is present, primary potassium depletion occurs. There is a tendency to extracellular alkalosis with a raised serum bicarbonate level. This is shown to be of metabolic rather than renal origin, being due to transfer of hydrogen ions from the extracellular fluids to the body cells. Hypokalaemic alkalosis due to potassium depletion is greater than the acidosis caused by renal tubular dysfunction, and an increase of serum bicarbonate occurs.

It has been shown that a relatively slight degree of potassium depletion can impair the ability of the kidney to secrete a maximally acid urine. Conn has shown that many of the cases of hypokalaemic alkalosis secondary to increased urinary potassium loss are in fact due to adrenal rather than renal disease, and this is called the condition of primary aldosteronism.

At least four more cases of this disease have been recognized since its description by Conn in 1955. The primary abnormality is an increased secretion, usually due to an adrenal cortical adenoma of aldosterone. This hormone causes a retention of sodium and increased output of potassium by the kidneys. Severe potassium depletion is produced, which results in the characteristic renal abnor-

malities described. Conn has shown that complete cure may be expected after surgical excision of the adrenal cortical adenoma. The adreno-genital syndrome, Cushing's syndrome and primary aldosteronism may each be caused by a secreting adrenal cortical tumour.

The third interesting feature of this case is that no albuminuria was demonstrable at first. The absence of albuminuria tends to cause the clinician to overlook renal disease as a cause of the clinical manifestations. The absence of albuminuria, of course, is a feature of purely tubular renal disease. A summary of the various types of renal tubular defect has been made by Payne (see earlier tabulation).

Another feature of this case was the Bence-Jones proteinuria. The Bence-Jones proteins were present on four separate occasions, and the tests were carried out and the results confirmed as being positive by a highly qualified pathologist. To my knowledge Bence-Jones proteinuria has not been recorded previously in osteomalacia due to renal acidosis.

The response to treatment in this case has been gratifying.

The ultimate prognosis would appear to be poor in view of the failure of the renal function to improve after six months' treatment. However, the symptomatic relief and the reversal of such profound metabolic disturbance have been well worth while, and the latter effect of treatment must considerably prolong the patient's life.

It has been stated by some authorities that if the diagnosis can be made before calcification is radiologically visible in the tubules the prognosis is correspondingly better and changes contributing towards renal failure may be reversed.

Acknowledgements.

My thanks are due to Dr. T. P. Loneragan, Honorary Radiologist, Lewisham Hospital, and to Dr. J. O'Brien, Director of the Pathology Department, Lewisham Hospital, for their assistance, which contributed largely to the diagnosis in this case, and also to Professor C. R. Bickerton Blackburn for his helpful comments.

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Reviews.

The Great Physiodynamic Therapies in Psychiatry: An Historical Reappraisal. Edited by Arthur M. Sackler, M.D., Mortimer D. Sackler, M.D., Raymond R. Sackler, M.D., and Félix Martí-Ibáñez, M.D., with personal contributions by Ugo Cerletti, M.D., Roy G. Hoskins, M.D., Ph.D., Laszlo Joseph Meduna, M.D., Egas Moniz, M.D., and Manfred J. Sakel, M.D., Sc.D.; 1956. New York: Paul B. Hoeber, Incorporated. 10^{1/2} x 7", pp. 206, with illustrations. Price: \$5.75.

THIS volume on the great physiodynamic therapies in psychiatry gives their discoverers an opportunity not merely to outline the steps which led to their work, but also to appraise it in the light of subsequent knowledge. A foreword by the editors discusses the history of organicism.

Manfred J. Sakel gives an account of the classical Sakel shock treatment. He pays generous tribute to the assistance of Professor Poetzl, who had "the unequivocal courage and selflessness" to permit the initial work at the Vienna Medical School. Dr. Sakel describes his early animal experiments which led to the later work on man, and step by step he takes us along the search for the ultimate treatment. Not the least of his difficulties was the creation of nomenclatures for his new therapy and the evolution of a rationale. The insulin coma was in some cases associated with convulsions. This led to an over-estimation of their clinical advantages, an error which has occasioned many misconceptions. The designation "shock therapy" was unfortunate, as it led to confusion with the convulsive therapy of Meduna. Sakel gives several comparative tables of results and shows the high percentage of recoveries from schizophrenia in skilled hands. He admits that the treatment is costly, but there is

wisdom in his contention that the problem of schizophrenia warrants financial aid required to provide adequate treatment. It is pointed out that much of the disrepute for the Sakel shock treatment is due to incorrect procedures, and Sakel asks for special courses for operatives; this indeed would seem a modest and basic request.

Laszlo Joseph Meduna entitles his chapter "The Convulsive Treatment" instead of "The 'Metrazol' Shock Therapy". The origin of his convulsive therapy was through experimentation, in which he produced convulsive spasms in guinea-pigs by camphor. He was led to undertake these investigations on hearing that schizophrenia had a benign effect on epilepsy. He deplores any competition between insulin and "Metrazol" shock therapy, since each has its sphere of action. Sometimes there is benefit to be gained from a combination of the two or from crossing from one to the other.

Ugo Cerletti in "Electroshock Therapy" tells how his discovery of electroshock was based on the report of hogs killed by electric current at the slaughter house. He observed the so-called "electric slaughter" and found that the pigs were merely convulsed and soon recovered. After this pointer to harmlessness, experimentation was commenced on man. Professor Cerletti is continuing his studies on the convulsive phenomenon and has developed a concept of acro-agonies. He believes that the shock liberates vitalizing defensive bodies. They are obtainable from extracts of pig brains after the animal has had electroshock. Preliminary tests suggest that more research may indicate further advances in acro-agonine therapy.

R. G. Hoskins in "Hormone Therapy" gives a balanced review of endocrine therapy. Thyroid extract is regarded as a "potentiating" agent with possibilities. He points out the extreme complexity of the endocrine problem, but believes that, though no spectacular successes have been recorded in therapy of the psychoses, there is room for further research.

Egas Moniz writes on "How I Succeeded in Performing the Prefrontal Leukotomy". He outlines the knowledge of cortical impulses prior to November 12, 1935, stressing the case note of Dandy's patient with ablated frontal lobes. After mentioning two years of constant thought on the possibilities of leucotomy, he modestly dismisses the crucial experiment of prefrontal leucotomy on man with a quotation which ends:

We do not doubt that what we have undertaken here will provoke a great deal of lively discussion, in the fields of medicine, psychiatry, psychology, philosophy and sociology alike. This we expect, but we continue to hope that any such discussion will contribute to the progress of science, and above all, to the welfare of mental patients.

In the concluding chapter carbon dioxide treatment is reviewed by J. D. Meduna, who believes it to have a future and thinks that its use was foreseen by Freud.

Whilst this book has a special significance for psychiatrists, it has an interest for all research workers. It emphasizes that small clues diligently followed to a conclusion may make a world-wide impact on scientific thought.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"A Text-Book of Mental Deficiency", by the late A. F. Trengold, M.D., F.R.C.P., F.R.S. (Ed.); Ninth Edition by R. F. Trengold, M.D., D.P.M., and K. Soddy, M.D., D.P.M.; 1956. London: Baillière, Tindall and Cox. 8^{1/2} x 5^{1/2}", pp. 496, with illustrations. Price: 40s.

Rewritten in accordance with modern ideas and developments, but with retention of as much of the original material as possible.

"Fluid Balance Handbook for Practitioners", by William D. Snively, Jr., M.D., and Michael J. Sweeney, M.D., with illustrations by Kathleen Calhoun; 1956. Oxford: Blackwell Scientific Publications. 9^{1/2} x 6^{1/2}", pp. 347, with illustrations and tables. Price: 51s.

The authors have aimed "to provide the practising physician with an inviting, clear and usable text on *clinical* fluid balance".

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All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the *Quarterly Cumulative Index Medicus*. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

"THE GREATER MEDICAL PROFESSION."

WITH the increasing complexity of medical practice the use of medical auxiliaries is becoming more and more necessary. In support of this statement mention may be made of the work of technicians in laboratories and X-ray departments, of biochemists, orthoptists, almoners, dietitians, physiotherapists, occupational therapists, chiropodists and the almost esoteric group of statisticians. As the number of persons engaged in the auxiliary services increases they are naturally becoming more conscious of the important part which they have to play. They form their own societies, associations and councils, draw up by-laws and set up standards that shall govern their conduct. One result of these developments is that practising members of the medical profession are from time to time faced with the question of what "recognition" they will give to auxiliary workers. It is true that every now and again members of auxiliary services are invited to join the conclaves of medically qualified persons. An example that comes to mind is the association of orthoptists with the ophthalmologists at meetings of the Australian Ophthalmological Association (British Medical Association); papers by orthoptists are published in the *Transactions* of that body. In spite of all this there is

sometimes a feeling that the attitude of the medically trained person is one of toleration or condescension to those who help him to reach a correct diagnosis and to formulate an appropriate line of treatment. When we consider this matter, we need to remember that by and large the average clinician of today is not so comprehensive an observer as his predecessor used to be. Medicine has become more scientific and less personal, labels are too easily fixed and the labelling is not always correct because in the process the patient as a whole individual, as a human being living, working and suffering among others of different types, may be lost sight of. We are all aware of the tendency to allow the performance of tests and the assistance of auxiliary aids to take the place of individual and personal study. Since, as already pointed out, these aids are becoming more important every day, we should take stock of our attitude to those who practise them.

This subject has recently been discussed by T. F. Fox, editor of *The Lancet*, in an address delivered to the Manchester Medical Society, and an extract has been published¹ under the title: "The Greater Medical Profession." Fox begins by stating that the medical profession is usually defined as consisting only of persons who have gone through a prescribed training and gained a medical qualification. We are, however, "not the only persons interested in health and disease, or the only people with brains; and the plain fact is that nowadays leading positions in medical research and teaching are held increasingly by men and women who do not happen to have taken a medical qualification". He goes on to state that we are conscious of having been anointed, if not by the Lord at any rate by the General Medical Council, and he wonders whether we have sufficiently adjusted ourselves to the change that is coming over medicine. "If the change is evident in the upper reaches, where we thankfully use the ideas and discoveries of more and more associates who are technically laymen, it is even more evident in the lower reaches where so much of the everyday work is delegated to people whom we likewise regard as outside our profession." In regard to our attitude to these people, Fox thinks that we should perhaps revise our ideas and regard everybody who does medical work as belonging to what he would call the greater medical profession. Turning to the National Health Service of Great Britain, he describes it as a new and important social experiment—"a nationally organized service whose professional members can go on working almost as though they were independent professional people". If this experiment succeeds, it will be looked on as a demonstration "that people can be paid out of public funds without changing their loyalties or their manner of work and without becoming subordinate officers of the administration". If it does not succeed, one possible reason for failure will be that "a great many of its members, doing medical work, are not recognized as professional, while some of them do not even want to be so recognized". What medical practitioners have to determine is whether they are going to encourage professionalism in others in the National Health Service or whether they will be content to let the service become just another industry. "Either we can have a health service of 'workers' or State employees, whose interests are looked after by their appropriate union but who have no professional life out-

¹ *Lancet*, October 13, 1956.

side the service. Or we can have one manned by members of free professions, working to the standard of those professions and stimulated by professional discussions and activities outside their working hours." Fox sums up his own view in the statement that, since so much of the work of medicine is henceforth to be done by people who are not doctors, doctors should encourage them to form themselves into professions, and help those professions to acquire responsibility and prestige as components of the Greater Medical Profession.

It is quite clear that Fox's address was intended for general practitioners in Great Britain working under the National Health Service. To restrict it to so narrow a field, however, would be ridiculous—all that he said could be applied to, and should be considered in, other parts of the British Commonwealth. Of basal importance is the fact that Fox, like a good statesman, looks into the future. He does not regard the problem as simple. Far from it. He declares that we are at present in process of turning our medical empire into a commonwealth. The members of the auxiliary services are not prepared to be colonies—they claim the status of a junior member of the commonwealth of medicine—we thus have the same difficulties as exist in the political sphere. Fox explains the difficulties:

On the one hand we know that when people come to think of themselves as professional they take more interest in the progress of their art, and are ready even at a sacrifice to abide by higher standards of practice and conduct; the leaders of a new profession press for better training, higher standards, and strictly ethical behaviour. On the other hand, we also know that a physiological desire for upgrading can easily become a pathological desire for aggrandisement. Instead of being content to help the doctor, the auxiliaries may insist that the vital importance of their labours demands more and more technical knowledge and added years of training, thus justifying ever higher pay and nearer equality with doctors.

In spite of these "real risks", Fox holds that if we wish our medical commonwealth to hold together, we should be well advised to avoid making our concessions too small or leaving them too late. "We should show ourselves as reasonable elder brothers, not as rulers who are being pushed." In this new commonwealth Fox does not think that the doctor will be merely one expert among many, because "with all its changes, medical work still arises from an appeal from a sick person who wants help and that appeal is normally made to a doctor". So long as the appeal is answered by a doctor, who retains responsibility for what is done, the doctor's position remains essentially the same. With every addition to the auxiliary services, the strain on the doctor becomes greater. Therefore, "to hold their own in the Greater Medical Profession, doctors will need to be very good doctors". When we consider the status of workers in a health service we must remember (and this goes for doctors as well as the others) that the deciding factor, of course, should not be the interests of any group; it should be the good of the patient. If all workers in the medical field keep this in mind, there will be no serious error. Doctors, especially, will have no fear such as will perhaps be felt by them when they first contemplate their idea of a "greater medical profession". The anointing that Fox mentions will still be cherished by them, but in their wisdom they may find some oil for other workers without medical qualifications who are as sincere, as devoted, and as self-sacrificing as they are themselves.

Current Comment.

NURSE AND PATIENT.

PEOPLE in hospital are not only sick people; they are human beings uprooted from their familiar surroundings, and subject to all the upset implicit in both changes in their normal status. The situation was sympathetically discussed by Felix Arden in his president's address delivered at the annual meeting of the Queensland Branch of the British Medical Association on August 25, 1956.¹ Arden refers to nurses as the most important members of the hospital team, and he has this to say about them:

Today's nurse has to be an efficient member of a team which draws gently back to life patients for whom there would have been no hope a few years ago. She has to learn about a fast increasing number of dangerous drugs. She has to control blood transfusions, artificial kidneys, electric shock therapy, patients with desperate burns, and tiny babies in incubators. She has also to answer questions put to her by patients who themselves know quite a lot about disease. Nursing has changed, along with medicine, and practically each new advance makes it more difficult and more responsible. More is needed than the capacity for sympathy, a cheerful countenance and the ability to place a cool hand on a fevered brow—important though these graces are. Good intellect and intensive training have become essential.

It is interesting, with this in mind, to consider the results of an investigation into nurse-patient relationships carried out by Beatrix Cobb, Head of the Medical Psychology Section, Department of Medicine, The University of Texas M. D. Anderson Hospital and Tumor Institute, in collaboration with five nurses—M. Catherine Asher, Mabel Embrey, Catherine Tovey, Estelle Champagne and Marian Metcalf.² A questionnaire was submitted to 50 patients in hospital with cancer; it was labelled a "Hospital Ideologies Technique", and comprised three categories—"The Science of Nursing", "The Art of Nursing" and "Miscellaneous". It is unnecessary to go into the technical details, except to indicate that the questions were put in such a way as to elicit responses from the patient concerning his feelings with as little "structuring" as possible, and that the questionnaires could be returned anonymously if the patients so wished. Patients were requested to answer the questions themselves, without consulting other patients. Many illuminating opinions emerged, and reference may profitably be made to some of them.

It was apparent that the patients' emotional needs and expectations in the nurse-patient relationship were significantly greater than their concern about physical care. That is not to say that the patients belittled the scientific competence and care of the nurse; but the suggestion is that they expected nursing care conducive to their physical comfort, and that they became aware of that aspect of nursing only when it was lacking. The investigation suggested that the patient's great need was for emotional security in the relationship with the nurse, and that there were four major qualities in the nurse that met that need. The first quality was empathy more than sympathy: the nurse should "be able to put herself in the patient's place", "feel genuine interest in patients as people". "A nurse should never become hardened to human suffering; she loses the key to her nursing right there." But it was emphasized that there was such a thing as too much sympathy: "Feel sympathetic but don't overdo it." "Be sympathetic without demoralizing the patient or his family." "Never pity a patient too much." The second important quality in a nurse was a warm and cheerful personality: "It was as if the patients sensed that it was the nurse who set the emotional climate on the ward, and felt secure or anxious according to the barometer of her personality." It was accepted that patients could be difficult, and the advice was given that nurses should remember that cranky patients were ill, and the crankiness might be due to pain or to fear. "Be a little understanding

¹ M. J. AUSTRALIA, October 13, 1956.

² J. Am. Geriatrics Soc., July, 1956.

in all situations, though it's hard sometimes with so many duties." Kindness on the part of the nurse was stressed as a major need, as also was cheerfulness; one comment on the latter quality is particularly significant: "I want the nurse to be cheerful because she believes in hope . . . synthetic cheer is worse than none." Another along the same lines was: "Never lose sight of the miracles she has seen . . . that is, never lose hope." It seemed that brightness and cheer on the part of the nurse were of much more help to the patients than too much sympathy, which might be interpreted as suggesting impending death. The fourth requisite concerned communication between patients and nurse, which should be free and easy at the verbal level, and warm and reassuring at the non-verbal levels. On the verbal level, it became apparent that the nurse was in a sense an interpreter between doctor and patient. Often the patient could not understand the doctor's explanations; but the nurse was able to talk to him in his own vocabulary. It was obvious that patients were greatly helped by nurses who were good conversationalists, and who would listen and try to understand. The non-verbal communication lay in the feeling tones and attitudes of the nurse, at picking up which the ill person developed a skill that was almost uncanny. This stresses again the importance of a warm, cheerful personality in the nurse, and the quality of empathy. The final important characteristic of the nurse was promptness, lack of which was the unpardonable sin. Every patient listed promptness as one of the greatest virtues of nursing care. ("Be as prompt as she can; minutes are hours when you are in pain." "Answer bell promptly; don't leave patient on bedpan until they grow to it!")

These, then, are the desirable characteristics of a nurse as recorded by 50 cancer patients, chosen at random as to age, sex, site of illness and social status. They can all be summed up in one word—humanity. However, bodies and minds grow tired, and even the most devoted nurse must at times reach a stage at which she inevitably falls below the high standard that she would wish to maintain. The advent of the forty-hour week cuts both ways; it may reduce fatigue, but at the same time it lessens the time which the nurse can spare for the patient apart from actual nursing procedures, simply to give him some of the human companionship that he craves. The answer to the problem is still to seek.

THE DELINQUENT PSYCHOPATH.

LOAN MACAULAY wrote of a celebrated politician of last century: "His intellect was in that most unfortunate of all states, too disordered for liberty and not sufficiently disordered for Bedlam." A satisfactory means has yet to be found of disposing of individuals who are constantly in conflict with the law, who fail to reform, yet who are neither intellectually subnormal nor insane. The problem of psychopathy and delinquency is discussed in their recent book by William and Joan McCord,¹ who point out that the psychopath is unable to identify himself with his fellow men to the extent that he can feel for them and have regard for their rights; he lacks inner anxiety, is affectively shallow and impulsive, acts by aggression rather than by repression, and suffers no guilt for his antisocial conduct. These character defects are usually apparent at an early age, when his social insensibility is repeatedly displayed in his conduct. Hereditarian studies throw little light on the condition; brain damage, possibly to the hypothalamus—revealed in abnormal electroencephalographic records—may play a part in some cases; but severe rejection during the first three years of life is regarded by the authors as the most potent factor. John Bowlby has referred to psychopaths as affectionless characters with a high incidence of familial rejection. Failure to develop a conscience arises out of the child's loveless life and his failure to identify himself with his parents. The father-

image of a harsh punitive figure is carried over in the psychopath's attitude to authority in general.

The adult psychopath is notoriously resistant to reformation, though various physical and psychological methods have had their rare successes. Accordingly the condition should be recognized at an early age. At what stage is it justifiable to say that a child delinquent is psychopathic, since it is antisocial or asocial behaviour which brings the child under notice? Usually the diagnosis is made after the child delinquent has proved to be a therapeutic failure; or in the case of an adult has a long history of crimes of varying severity, committed impulsively, often without profit, and without regret, except for failure to evade detection. In prison the adult psychopaths, write Dr. and Mrs. McCord, "lead most of the riots, pass most of the drugs, and indoctrinate most of the newcomers". They are rarely accepted by other lawbreakers as one of themselves.

For child delinquents in general Dr. and Mrs. McCord favour a permissive regime based on methods used by Aichorn on lawless neglected and uncontrolled adolescents in Vienna after the first World War. The more resistant and psychopathic types were found sufficiently often to respond to tolerance and love to justify a similar regime in the Wiltwyck School for maladjusted boys, which includes, in addition to the ordinary school curriculum and individual psychotherapy, a large measure of group therapy, such as participation in patients' committees. A battery of psychological, including projection, tests used both in primary diagnosis and in assessing progress showed reduction in aggressive phantasies and increased recognition of the value of authority in improving subjects.

Treatment of the adult psychopath is much less successful. There should be greater recognition of his reduced responsibility, which would involve a modification of the standards accepted by law in the M'Naughten rules. Sheldon Glueck has proposed that when the law has determined that the psychopath has committed the offence of which he has been accused, he should be handed over to a treatment tribunal which would determine his disposal under an indeterminate sentence. The psychopath would be released only when deemed fit to return to society. Bernard Shaw said that releasing an aggressive psychopath is like letting a tiger out of the zoo to find his next meal in the nearest children's playground. Clearly there is a need for a long-term policy which will both afford protection to society and provide something more in the way of treatment than is included in the ordinary prison routine.

ALGAE AND PLANKTON.

NUMBERS of scientists have stated that the only foreseeable solution to the problem of feeding the world's ever-increasing population lies in developing the enormous resources of algae and plankton offered by the waters of the earth. There is little doubt that they are right. At the present time a certain amount of food goes to waste—a surplus may be produced in one country, but complicated economics prevent its reaching the poorer countries where it is needed. In any case, even today, utilization of all surpluses would not fully feed the hungrier parts of the earth. We know how to reclaim deserts, and how to improve poor soil, but such projects would be prohibitively costly, and would consume more time than we have at our disposal. On the other hand, the development of algae and plankton as foods is relatively cheap, easy and quick. Typical methods of farming algae have already been discussed in these columns.²

A most comprehensive and detailed survey of the subject is contained in "The Role of Algae and Plankton in Medicine" by M. and D. Schwimmer.³ Actually, this role is small and unimportant; many species of macroscopic algae

¹ M. J. AUSTRALIA, June 4, 1956.

² "The Role of Algae and Plankton in Medicine", by Morton Schwimmer, M.D., and David Schwimmer, M.D., F.A.C.P.; 1955. New York and London: Grune and Stratton. 8½" x 5", pp. 95. Price: \$3.75.

¹ "Psychopathy and Delinquency", by William McCord, Ph.D., and Joan McCord, Ed.M.; 1956. New York and London: Grune and Stratton. 8½" x 5", pp. 240. Price: \$6.50.

(seaweeds) have been used in many parts of the world as foods and remedies, but modern medicine has better drugs, and seaweeds have little food value beyond their mineral and vitamin content. Derivatives of certain seaweeds, such as agar-agar and the alginates, have valuable ancillary uses in medicine, surgery, dentistry and the food industries, but the plants themselves are not likely to be included in the diets of the future for their nourishment value—an exclusion which anybody who has struggled with sea-kale as served in a Kensington boarding-house in rationed England, or with dried leaves in Japanese prisoner-of-war camps, will contemplate with complete equanimity.

However, the microscopic algae or phytoplankton contain, in addition to a rich supply of vitamins, high percentages of protein, carbohydrate and lipids; the amino-acid content of some has a wide range. Utilization of phytoplankton is likely to be through farming in special tanks; collection from the sea is too difficult owing to the minute size of the organisms; and as some are poisonous and many are unpalatable, netting or filtering would not be sufficiently discriminating. Most of the work so far has been done on fresh-water algae; the farming of certain species of *Chlorella* offers great promise.

Zooplankton is a different matter. It consists of over 90% copepods, mainly *Calanus* species. It can be netted, even though one cubic metre of seawater contains only something like 0.1 grammes, with a hypothetical food value of four Calories per gramme. This means that 7500 cubic metres of sea water would need to be filtered to produce 3000 Calories—possible only by the use of fixed nets in channels, but nevertheless practicable. A favourable yield has been calculated at 65 tons per square kilometre of sea surface per year. It is stated that raw zooplankton tastes like raw oysters, while when cooked it tastes like cooked shrimp. Already many shipwrecked persons and explorers have supplemented their diet with zooplankton; the limitations have been those imposed by a shortage of fresh drinking water, since when only 800 millilitres is available daily, the limits of excretion of salt and urinary nitrogen are reached after eating zooplankton to the extent of 300 Calories. Of course, these difficulties would not exist when the copepods were caught and treated for consumption under normal circumstances.

All in all, it would seem that a great future lies in the utilization of plankton, both vegetable and animal, for food, and that serious consideration, at an early date, of methods for the exploitation of the available resources would not be out of place.

DEATH AND THE DOCTOR.

Most human beings, if they allow themselves to think about it at all, have some curiosity about the time and manner of their own death, and doctors are no exception. In fact, they are well equipped to take an objective view of the matter, since in the course of their daily work they inevitably become familiar with death in most of its forms. A. Touraine¹ has undertaken an ingenious and slightly macabre investigation, with the object of permitting doctors to gain some idea of their probable way of quitting this vale of tears. He has gone through 20 issues of *The Journal of the American Medical Association* appearing in 1955 and the early part of 1956, and has collected 1000 notices of deaths of doctors in which the age and the final diagnosis were given. To do this he had to count 1193 notices, since in 193 the age only was given, without the diagnosis. Of the 1193 notices, 1179 referred to men and only 14 to women; but as the ages of the women doctors did not differ from those of the men, he has considered the two sexes together in his statistical assessment. He has summarized his findings in the following way.

Among doctors aged from thirty to fifty years, the principal causes of death were as follows: disorders of the circulation, 53.3%; accidents, 17.5%; cancer, 13.3%;

infectious diseases, 8.3%; various disorders of the digestive system, 3.2%. In the age group fifty-one to seventy years, disorders of the circulation accounted for 71.1%, cancer for 15.8%, infectious diseases for 4.5%, uremia for 2.3%; accidents for 1.9%, chronic diseases of the nervous system for 1.1% and various disorders of the digestive system for 1.1%. After the age of seventy years, the proportion of deaths due to disorders of the circulation decreased to 64.6%, while cancer accounted for 18.7%, and 8.0% resulted from infectious diseases, 3.4% from uremia and 1.3% from accidents. When all age groups are combined, it is found that 65.9% of the deaths were due to disorders of the circulation, 17% to cancer, 6.8% to infectious diseases, 3.5% to accidents, 2.7% to uremia, 1.3% to various disorders of the digestive system, and 1.1% to chronic diseases of the nervous system. Touraine comments on the extreme preponderance of deaths due to circulatory disorders—two out of every three among the doctors studied; in France, for the general masculine population, the figure is only one in three. (This finding simply confirms what has long been known.) Cancer follows at a respectable distance, accounting for approximately one death in six (one in 6.6 in the general population). The order is then as follows: infectious diseases, one in 15 (one in 13 in the general population); accidents, one in 30 (one in 20 in the general population); and uremia, one in 37.

It must be borne in mind that Touraine's comparisons may not necessarily be justifiable, since his mortality figures come from the United States of America and his normal figures from France. It is by no means certain that the same conditions are operative in the two countries. Moreover, statistics, as is well known, can be used to prove anything. However, Touraine's intention is simply to provide some pointers showing the general trend, so that doctors, knowing what hazards confront them, may perhaps be able to avoid them by taking care, and so that they may be able in some degree to estimate the date and manner of their death. In this last respect he drily remarks that he does not know whether they will find grounds for hope or for fear.

LUNG FUNCTION IN COALWORKERS' PNEUMONOKONIOSIS.

UNTIL comparatively recently the opinion has been generally held that the inhalation of coal dust alone, even for prolonged periods, was harmless, but this opinion has had to be reviewed and coalworkers' pneumonokoniosis caused by coal dust has had to be accepted as an established entity. This condition and its main features have been described by J. C. Gilson and P. Hugh-Jones² as an introduction to a report on their investigation into lung function as it is affected by coalworkers' pneumonokoniosis. The main work which has served to establish this condition as a pathological entity was done in South Wales, but Gilson and Hugh-Jones state that it is not peculiar to this region. It consists of two distinct pathological processes with characteristic radiographic appearances corresponding to them: the first process, "simple pneumonokoniosis", results from the retention of coal dust and increases only if dust exposure continues; the second process, "complicated pneumonokoniosis", results from an infective process ("massive fibrosis") superimposed on the simple pneumonokoniosis, and once acquired may advance independently of any other dust exposure. Gilson and Hugh-Jones summarize the clinical features of coalworkers' pneumonokoniosis and the interrelation of the many classifications proposed for the various radiographic appearances. They also review world literature on previous studies of lung function in this condition, from which it is apparent that neither the cause of the breathlessness nor the relation of its severity to the radiographic appear-

¹ "Lung Function in Coalworkers' Pneumoconiosis", by J. C. Gilson and P. Hugh Jones, Medical Research Council, Special Report Series, Number 290, 1955. London: Her Majesty's Stationery Office. 9 $\frac{1}{2}$ " x 6", pp. 266, with illustrations. Price: 21s. net.

ances has been properly established. The present report is an account of an experiment intended to throw some light on the position. It was planned with the following double objectives: (i) to determine the nature of the disturbance of lung function in miners with pneumonokoniosis, and its relation to age and the radiological severity of the disease; (ii) to determine the interrelation of a group of lung function tests in order to find what functions each test measured, and the extent to which one overlapped with another, and also to determine the most suitable combination of tests for various purposes, especially for the assessment of disability in men with pneumonokoniosis. The study involved 40 normal subjects and 118 miners between the ages of twenty-three and sixty years. The subjects were selected at random and grouped to represent each of four different radiological stages of coalworkers' pneumonokoniosis, so as to complete an orthogonal experimental plan permitting separation of the effects of age and X-ray category. There were also controlled groups of non-miners and of working miners with no radiographic evidence of pneumonokoniosis. Besides clinical and electrocardiographic examinations the lung function tests used included measurements of standard exercise ventilation and blood oxygen saturation, of the total lung capacity and its subdivisions, of diaphragm movement, of maximum voluntary ventilation, and of intrapulmonary gas mixing and transfer by a new technique of recording the uptake of helium and carbon monoxide simultaneously. Gilson and Hugh-Jones list four findings from the experiment. The first is that of the functional tests the exercise ventilation expressed as a percentage of the maximum voluntary ventilation was the best index of breathlessness and compared well with independent clinical assessment. The second is that the exertional dyspnoea associated with coalworkers' pneumonokoniosis is mainly caused by a reduction in the maximum ventilatory capacity of the lungs, rather than by an increase in the amount of air required for a given amount of exercise. There is, however, some increase in air requirement, especially in advanced disease, which is associated with an uneven pulmonary ventilation and impaired gas transfer as measured by the uptake of helium and carbon monoxide while the subject is at rest. In general (this is the third finding) the relation between the degree of exertional dyspnoea and the radiographic appearance is close if, but only if, age is taken into account. Simple pneumonokoniosis has a relatively small effect, but does accentuate the exertional breathlessness which normally comes on with age. In the presence of complicated pneumonokoniosis the breathlessness is usually severe; it increases with the radiological abnormality and is augmented even more by age. The fourth point is that cardiac abnormality occurs in association with advanced complicated pneumonokoniosis and is detected by a fluoroscopic examination and specific electrocardiographic changes. Gilson and Hugh-Jones give reasons to justify the general application of these results, and they then discuss the relevance of the results of the experiment to the important question of compensation for industrial injury. The remainder of the report is taken up with a detailed interpretation and discussion of the experimental methods used and the general statistical analysis. It should be of considerable interest to those working in this field.

SERUM HEPATITIS AFTER DENTAL PROCEDURES.

THE differentiation of homologous serum jaundice and infectious hepatitis is not yet possible in the individual case, although the former condition is suspected if there is a recent history of blood transfusion, or, indeed, of any variety of injection. Careful history-taking has been responsible for the suggestion put forward by F. E. Foley and R. N. Gutheim¹ that there may be a relationship between some cases of viral hepatitis and a visit to the dentist. Of 57 cases met with in the Rochester General Hospital, seven had followed blood or plasma infusions. In 15 of the remaining 50 cases the patients gave a history

of an injection (in one case of a surgical procedure only) by a dentist during the one to six months preceding the onset of symptoms. Two of the other 35 patients had visited the dentist within this period, but had had no injection. Inquiry of 68 consecutive in-patients with diagnoses other than hepatitis revealed that only three of them had had a dental injection in the previous six months. When another "control" series was paired by age with the group of hepatitis patients, a similarly low incidence of recent dental injections was found. Some of the patients with hepatitis had all attended the same dentist.

The case for an association is based upon the retrospective analysis of hospital records, a notoriously unsatisfactory technique for statistical purposes. It is striking that in only 19 of the 57 histories was there no note regarding the presence or absence of recent dental treatment, a fact which is probably explained by the observation that the association was first suspected by the hospital staff in 1952. It is also remarkable that of the 35 patients who had not had dental treatment in the past six months, no less than 18 had had some sort of injection, usually either penicillin or a hormone. Unfortunately, the incidence of other injections is not recorded for either of the "control" series. An attempt to produce more than statistical evidence is the authors' impression that the clinical picture in the series of 15 "dental serum hepatitis" patients was more in keeping with that of serum hepatitis than infectious hepatitis. In this regard they point to the appropriate incubation period observed in all their cases, to their relatively insidious onset, to the absence of high fever (except in one case) and to the comparatively high mortality (the only three deaths were among the 15 patients who had had dental treatment). These points are, of course, non-specific, and although the relevant data for the 15 particular patients are given, those for the remaining 35 patients are omitted.

The association which Foley and Gutheim describe is not by any means proof of a causal relationship. On the other hand it is both a thoroughly reasonable observation and an important one. That the possibility has received little attention may well be due, as Foley and Gutheim contend, to the fact that the usual question about "needles" in the past few months fails to produce any reference to dental treatment by the patients.

ANTIBIOTICS AND ENTEROCOLITIS IN CHINCHILLAS.

A CLINICAL OBJECT-LESSON is contained in a recent account by J. S. Wood, I. L. Bennett and J. H. Yardley² of the development of staphylococcal enteritis in chinchillas. Interest in the health of a commercial colony of these small fur-bearing rodents had led to the inclusion of a small amount of chlortetracycline in the pellets which constituted their diet, in order to control possible infection with organisms of the *Shigella* and *Salmonella* groups. Within six months of the inclusion of the drug in the foodstuff, about 10% of the animals died with symptoms of lethargy, refusal of food, diarrhoea and the passage of occasional blood-stained stools before death. Examination of the mucous membrane of the colon showed ulceration with pseudomembranous exudate, and huge clumps of Gram-positive cocci could be seen after suitable staining; these proved on culture to be haemolytic *Staphylococcus aureus*, which was susceptible to penicillin and erythromycin. There was not, however, much resistance to the tetracycline drugs except in one or two instances. The organisms were not found in the heart blood. The chlortetracycline was immediately eliminated from the diet, and treatment of the sick animals with other antibiotics was begun. No further deaths occurred. Wood, Bennett and Yardley compare the lesions in the chinchillas to similar lesions found in human patients treated with tetracyclines for long periods, and they discuss the aetiological factor which appeared to operate as a result of inclusion of tetracycline in the diet. The moral of the tale is obvious.

¹ Ann. Int. Med., September, 1956.

² Bull. Johns Hopkins Hosp., June, 1956.

Abstracts from Medical Literature.

OBSTETRICS AND GYNAECOLOGY.

Primary Carcinoma of the Fallopian Tube.

A. N. FRANKEL (*Am. J. Obst. & Gynec.*, July, 1956) reports a study of primary carcinoma of the Fallopian tubes on the basis of ten cases from Beth Israel and Harlem Hospitals during the period 1942 to 1951. Some 600 cases have been reported in the literature to date. The incidence of tubal carcinoma is reported at from 0.1% to 0.5% of genital cancer. The average age of patients in this series was forty-nine years. The most common symptoms among the ten reported patients were vaginal discharge or bleeding, lower abdominal pain, and enlargement of the abdomen. Pain was as common as vaginal discharge or bleeding (six out of ten cases) and was usually unilateral, being on the same side as the lesion. These three symptoms are recognized as a common triad in carcinoma of the tube. A pre-operative diagnosis of carcinoma of the Fallopian tube was not made in any of the ten cases, and in only one case was the diagnosis made at laparotomy. The others were discovered after microscopic examination. In six of the cases the involved tubes were distended at their distal ends, the condition resembling pyosalpinx, hydrosalpinx or hematosalpinx. Four of the lesions resembled tubo-ovarian inflammatory masses with associated adhesions. Unilateral involvement was present in eight of the ten cases, and coexisting pathological conditions included fibromyoma, simple ovarian cysts and tubo-ovarian abscesses. Microscopically, the lesion was found to be papillary carcinoma in five cases, partly papillary and partly solid in two, adenomatous in two, anaplastic in one, and necrotizing in one. The treatment recommended by most authors is panhysterectomy with bilateral salpingo-oophorectomy followed by irradiation. Five of the patients in this series had full surgical treatment, and four underwent supracervical hysterectomy and bilateral salpingo-oophorectomy. Only one patient has lived for five years (10% survival rate). The author stresses the difficulty in clinical recognition and diagnosis of primary carcinoma of the Fallopian tube. He considers that Papanicolaou vaginal smears used as a routine may be of value in early diagnosis. Hystero-salpingography is considered a dangerous diagnostic procedure after a positive finding from smear examination. The value of culdoscopy is questionable since diagnosis at laparotomy is difficult. It is suggested that the low salvage rate might be improved by the performance of laparotomy for all adnexal masses which cannot be diagnosed.

Cancer of the Cervix Uteri.

M. A. VAN BOUWDIJK BASTIAANSE (*Am. J. Obst. & Gynec.*, July, 1956) discusses treatment of cancer of the cervix uteri and outlines the scheme of treatment observed in the gynaecological clinic at

the University of Amsterdam. The operative mortality rate, which has been reduced to less than 1%, has widened the field of surgical treatment for cervical cancer. In assessing the treatment of choice the author considers three factors: the primary death rate due to treatment; the rate of permanent recovery; the risks of severe damage by therapy. Individual factors are taken into consideration in selecting the method or methods of treatment. The author discusses the advantages and disadvantages of the following methods of treatment: radium therapy, Wertheim's operation alone or combined with irradiation, Schauta's operation with or without pre-operative radium therapy. Discussing the risks of damage from treatment, he states that radium may cause injuries varying from proctitis to fistula. Wertheim's operation may be followed by ureteral fistula or impaired innervation of the bladder. Schauta's operation may cause impairment of the innervation of the bladder. The author considers that benefit should result from the combination of pre-operative radium therapy with surgical operation for cervical cancer. Ordinary vaginal hysterectomy is the author's preference for cervical cancer *in situ*. Carcinoma of the cervix in stages 1 and 2 is treated by a full dose of radium, followed four weeks later by Schauta's or Wertheim's operation. Stage 3 cancer is treated with radium and X-ray therapy; reassessment is made four weeks later to determine whether radical operation can be performed. Stage 4 cancer is treated with radium and X-ray therapy, and total or partial exenteration may be considered. Carcinoma of the cervix in stages 1 and 2 associated with pregnancy is treated with pre-operative radium therapy followed by radical hysterectomy during the first month of pregnancy and treatment with radium in the later months. When the child is viable, the patient is treated by Cesarean section followed by Wertheim's operation. Stage 3 and stage 4 growths complicated by pregnancy are treated with radium therapy and subsequent Cesarean section and radical abdominal operation if possible. The author considers that Schauta's operation has the advantages of carrying less operative risk than the Wertheim operation, there is no risk of necrosis of the ureters, and it can be employed after radium therapy. The technique of Schauta's operation is described and illustrated. In 1948 the overall five-year cure rate was 51.7%; for surgically treated patients the cure rate was 71.4%; and for those receiving radium therapy it was 26.1%.

Obstruction of the Fallopian Tubes.

J. H. PRATT, E. A. BANNER AND M. HUANG (*Am. J. Obst. & Gynec.*, May, 1956) discuss reconstructive operations for obstruction of the Fallopian tubes and report results of treatment of 26 patients at the Mayo Clinic during the years 1945 to 1953. A brief review of the literature shows greatly improved results in recent years from the operations of salpingolysis, salpingoscopy and tubal implantation. The causes of tubal occlusion in the series were myomata, pelvic inflammatory disease and endometriosis. Fifteen of the 26 patients had

previously undergone surgical procedures. Four types of surgical approach were used: salpingostomy, tubal implantation, end-to-end anastomosis of the tube, and implantation plus salpingostomy. Secondary procedures were performed as indicated when the abdomen was opened; these included uterine suspension, appendicectomy and lysis of adhesions. Each operation was preceded by dilatation of the cervix and uterine curettage. Salpingostomy was performed on 15 patients with occlusion at the fimbrial end of the tube. Five patients underwent implantation of the tube, five salpingostomy combined with implantation, and one end-to-end anastomosis of the ampullary portion of the tube. Post-operatively, all patients received antibiotic therapy; they were allowed to walk twenty-four hours after operation, and repeated Rubin tests were performed after the fourth or fifth day. Of 15 patients who underwent salpingostomy, there was tubal patency in only six, and only one became pregnant and aborted at the second month. Of the five patients who had tubal implantation, the results of tubal patency tests were negative in all but one; however, four of these patients later became pregnant one or more times, and seven full-term pregnancies have resulted in this group. No pregnancy resulted in the patient who had end-to-end anastomosis of the ampullary segment of the tube. No pregnancies resulted in the five patients who underwent combined tubal implantation and salpingostomy. The technique employed in the operation is described and illustrated. The authors conclude that a number of patients with tubal occlusion are suitable for definitive surgical procedures. Patients with isthmic obstruction and patent fimbrial segments of the tube have a good prognosis. When the fimbriae have been occluded, patency of the tubes may be established, but few pregnancies result.

Spinal Anesthesia in Obstetrics.

E. S. BURGE AND C. E. BALDWIN (*Am. J. Obst. & Gynec.*, May, 1956) discuss conflicting reports in the literature on the use of spinal anesthesia in obstetrics and report a study of 8524 deliveries under spinal anesthesia at Evanston Hospital. Attention is drawn to the risk of aspiration of vomitus under inhalation anesthesia, and authorities are quoted who consider that inhalation anesthesia occupies first place in obstetric anesthesia death tables. Approximately 56% of the author's patients undergoing confinements had spinal anesthesia. The increased popularity of this type of anesthesia is apparent from a consideration of the incidence of 7% of deliveries in 1947 compared with 70% in 1955. There were no deaths in the series, and in two cases only was there disability which could be related to the spinal anesthesia. One complication was a mild foot drop, and the other was paralysis of the *sphincter ani*, from which recovery occurred in six weeks. Post-spinal headache occurred in 7% of cases, and it was found that the intravenous injection of "Ergotrate" after the delivery of the placenta often caused marked hypertension with severe headache. The authors have now discon-

tinued the intravenous administration of "Ergotrate" to patients who have received spinal anaesthesia. They do not administer spinal anaesthesia as a routine for deliveries. It is used only as a terminal form of anaesthesia when the patient is ready for delivery. The technique of administering the anaesthetic is described, emphasis being placed on proper positioning of the patient, the performance of lumbar puncture and the injection of the anaesthetic solution, consisting of 0.5 millilitre of 1% "Pontocaine" solution (five milligrammes) and 0.5 millilitre of 10% dextrose solution. If within ten minutes satisfactory analgesia is not achieved, the authors proceed to general or local anaesthesia. They consider that certain requisites are essential for the use of spinal anaesthesia in obstetrics. The suitability of the case, the correct timing of the injection and a qualified anaesthesiologist are mentioned in this respect. The following contraindications are listed: a history of disease of the central or peripheral nervous system; a history of back injury, pain, or spinal fusion; the complications of haemorrhage, shock, hypotension or severe hypertension; fear of spinal anaesthesia or serious reluctance on the part of the patient; all obstetrical operations for which optimal uterine relaxation is necessary—for example version, difficult rotation and breech deliveries. The authors list the following advantages of spinal anaesthesia in obstetrics: instant relief of pain; no depression of the fetus; reduction of post-partum haemorrhage to a minimum; no increase in incidence of operative delivery; virtual elimination of the risk of aspiration of vomitus.

Cæsarean Section Mortality.

E. H. BISHOP (*Am. J. Obst. & Gynec.*, June, 1956) analyses 146 deaths from Cæsarean section in the city of Philadelphia from 1938 to 1953. The deaths were reviewed in two consecutive periods of eight years, in the latter of which the obstetrician had available "bank" blood and chemotherapeutic and antibiotic drugs. There were 80 deaths in the first eight-year period, and 66 in the second, despite an increase of over 100,000 births. Although maternal deaths from all causes have been reduced during this sixteen-year period to 0.7 per thousand live births, the percentage of maternal deaths associated with Cæsarean section has gradually risen to almost one-fifth of all maternal deaths. During the last eight years there has been a marked decrease in the number of deaths attributable to haemorrhage, infection and heart disease, with an increase in the number due to anaesthesia, embolism and miscellaneous causes. Fifty-eight patients died from haemorrhage—25 in the first period and 13 in the second. The most frequent preventable errors were inadequate pre-operative technique and inadequate blood replacement after surgical procedures. There were six deaths attributable to the anaesthetic in the first eight years, and 11 in the last eight years. Ten deaths resulted from spinal anaesthesia, and six from the aspiration of gastric contents. No explanation could be found for the increased number of nine deaths from embolism in the second group as against

three in the first group, though there was a relative rise in the number of sections performed. The author urges that an adequate supply of blood for emergency use should be available in every obstetric department. Over-confidence in antibiotic therapy must not adversely affect obstetric judgement or surgical technique. Anaesthesia for Cæsarean section should be under the direction of a specialist anaesthetist. Cæsarean section should be limited to those cases in which it has proven value; but when the operation is indicated, it should be carried out promptly with proper preparation of the patient.

Post-Menopausal Endometrial Hyperplasia.

E. R. NOVAK (*Am. J. Obst. & Gynec.*, June, 1956) describes 36 cases of post-menopausal hyperplasia in which hysterectomy and removal of all ovarian tissue were carried out. The average age of the patients was fifty-seven years, and there was an increased frequency of obesity, hypertension, diabetes and sterility. This suggests an endocrine disorder of general nature, with the pituitary strongly suspect. To the author, adenocarcinoma seems an exaggerated and frequent, though not inevitable, end stage of hyperplasia if the proliferative stimulus is sufficiently strong and powerful. Evidence seems to point strongly to oestrogen as this stimulus. Persistently recurrent hyperplasia around and after the menopause should not be treated too conservatively if there is a tendency to increased atypia and proliferation. The development of endometrial cancer in ovulating women seems to represent a different disease process; it may be a sequel to patches of unripe endometrium which are incapable of responding to progesterone, and are thereby subject to the prolonged and unopposed action of oestrogens.

Transvaginal Pudendal Nerve Block.

A. J. KOBAK, E. F. EVANS AND G. R. JOHNSON (*Am. J. Obst. & Gynec.*, May, 1956) describe a method of transvaginal pudendal nerve block which they have found simple and effective for operative vaginal deliveries. They state that this procedure has proved satisfactory in their hands for all vaginal deliveries except version and extraction. It has the advantage of being without risk to the mother and baby. True pudendal nerve block occurs when an anaesthetic agent is injected adjacent to or into an arbitrary anatomical portion of the nerve bundle, and results in a temporary absence of painful sensations in the area supplied by this nerve. The requisites for such an injection are as follows: one 20 millilitre Luer-Lok syringe; one six-inch, 20-gauge needle; 30 millilitres of anaesthetic mixture containing 1% procaine hydrochloride; two minims of epinephrine 1:1000; 150 U.S.P. units of hyaluronidase. The addition of hyaluronidase to the anaesthetic solution is considered to permit infiltration in the vicinity of the nerve instead of directly into the nerve; also anaesthesia is said to develop more rapidly, and smaller

volumes of anaesthetic solution are needed. The patient is prepared and draped in the lithotomy position when delivery is imminent. The left ischial spine is palpated, and the shaft of the needle is placed in the groove between the second and third fingers of the left hand. The needle penetrates the vaginal mucosa just below the projection of the ischial spine. As the needle is inserted, aspiration is made for gross blood prior to injecting above and posterior to the ischial spine. The site of vaginal injection is massaged, and cutaneous sensation is tested before commencing delivery. The authors report good or excellent results in 97% of 156 patients injected in this way. They consider the performance a simple and safe one affording accuracy in direct nerve infiltration.

Plastic Operations on the Fallopian Tubes.

J. P. GREENHILL (*Am. J. Obst. & Gynec.*, September, 1956) reviews the present status of operations on the Fallopian tubes in sterility. He states that after 2113 plastic tubal operations there resulted 40% pregnancies, an incidence of 19.1% or one pregnancy after every five operations. Only five authors in the series reviewed reported 25% or more living children. Before operation the following conditions should be present: (i) Occlusion should be verified by two Rubin's tests (one with anti-spasmodics) and a hystero-salpingogram. (ii) The patient should preferably be less than thirty-five years of age, with at least one functioning ovary. (iii) There must be no other cause for the sterility but tubal closure. (iv) There must be no tuberculosis of the genital tract. Where the presence or absence of ectopic pregnancies was mentioned (286 cases), 45 tubal pregnancies were recorded, an incidence of 15.7% or approximately one ectopic pregnancy after every six operations.

Anovulatory Cycles in Women.

I. L. C. DE ALLENDE (*Am. J. Anat.*, March, 1956) states that Corner was the first to suggest the possibility of anovulatory menstrual cycles in women, without apparent signs and symptoms. This was soon confirmed by a number of investigators. The present author comments on the methods more commonly in use for diagnosis of anovulatory cycles, most of which allow a decision only on whether or not a *corpus luteum* is present and functioning. According to her experience, of all available procedures, the daily colposcopic study is the only one that permits an adequate characterization of the ovarian function constituting the background of the cycle under consideration. She states that it is extremely exceptional to find that any woman, no matter how healthy she may be considered, has only ovulatory cycles. She further discusses the physiopathological and medical importance of anovulatory cycles. The present communication is the result of a systematic study over several years by the author and her associates and emphasizes the fact that it is now possible, by means of simple procedures, to determine with a satisfactory degree of accuracy the functional condition of the ovary.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Victorian Branch of the British Medical Association was held on July 4, 1956, at the Royal Children's Hospital, Melbourne. The meeting took the form of a series of clinical demonstrations by members of the medical staff of the hospital. Part of this report appeared in the issue of December 22, 1956.

Collagen Disease.

DR. DOUGLAS GALBRAITH'S three cases illustrated different aspects of collagen disease, a disease of the "inter-cellular cement" of connective tissue.

Dermatomyositis with Calcinosis Universalis.

The first patient, a boy, aged seventeen years, showed how progressive dermatomyositis, over a period of years and associated with widely spread calcinosis, had led to emaciation and gross deformity. Ten years prior to the meeting the boy had become fairly acutely ill with a condition resembling scarlet fever, but without sore throat. There was generalized glandular enlargement, and then within a few weeks "rheumatic" pains had developed in several joints, with considerable restriction of movements. There was an erythematous rash on the face. Nine years prior to the meeting the erythema of the face was persisting, and the face appeared to be "puffy". Gradual stiffening and flexion of all joints were occurring. One year later the patient had been admitted to the Orthopaedic Section of the Royal Children's Hospital, where X-ray examination revealed diffuse calcium deposits in all tissues. Another interesting feature, which had persisted, was the presence of a petechial rash over both axilla, the gluteal regions and the upper parts of both thighs. Since that time, and in spite of ACTH and cortisone therapy, no improvement had occurred. The joint contractions had increased to such a degree that the patient was now restricted to "wheel-chair life". That had led to severe scoliosis. There had been frequent extrusions of pieces of calcium phosphate, often associated with infections, from various skin areas. Estimations of the serum electrolyte content, serum agglutination tests, and estimation of the urinary calcium and ketosteroid excretion had given normal results.

Disseminated Lupus Erythematosus.

DR. GALBRAITH'S next patient was a boy, aged thirteen years, who demonstrated typical features of disseminated *lupus erythematosus*. The condition appeared to be in reasonable control with large doses of cortisone ("Prednisone"); but evidence of cortisone over-dosage (Cushing's syndrome) was present. The story was that thirteen months previously the boy had developed pain in many joints, with considerable loss of energy, and an erythematous rash of "butterfly" distribution on his face. One month later he had suffered from frequent vomiting, and the rash appeared on his knees. One month later again he had been admitted to the Royal Children's Hospital, where, in addition to the foregoing signs, the rash was found to be on both knuckles, and there was edema of the right periorbital tissue. A systolic cardiac bruit was heard. A main presenting feature was the extreme muscle weakness, which prevented the boy from standing and even from feeding himself. There was nothing of significance in the boy's previous medical history, but the family history showed that one brother had died at the age of twelve years of cardiac disease and purpura, and that his father had died of cancer of the prostate gland.

Since the boy's admission to the Royal Children's Hospital, cortisone had been given in heavy dosage, which had gradually been raised to 1400 milligrammes per week. Late the maintenance dosage had averaged approximately 500 milligrammes per week. With that treatment there had been improvement in the boy's general health up to the stage of reasonably normal physical activity, accompanied by pronounced improvement in mental ability and concentration. The skin lesions had remained unaltered. There had been no unequivocal evidence of visceral complications, although there were occasional red cells in the urine, and recently the S-R segment in the electrocardiogram had appeared to be raised. The prognosis was still doubtful. Investigations had shown that the erythrocyte sedimentation rate, the blood urea level, the serum electrolyte content and the urinary excretion of chloride and calcium were within

normal limits. The serum cholesterol content had been raised (480 milligrammes per 100 millilitres). Serum protein estimations had shown the typical pattern of collagen disease; the α_2 (16%) and γ globulin (25%) fractions were raised, and the albumin content was lowered to 39%. Investigation of the urinary proteins showed an increase in α_2 amino-nitrogen excretion. So far, L.E. cells had not been found. A disturbing feature was the degree of osteoporosis, particularly of the spinal vertebrae, due to the high cortisone dosage.

Scleroderma.

DR. GALBRAITH'S last patient was a girl, aged eight years, whose clinical feature at one stage had suggested a diagnosis of poliomyelitis; but the condition now clearly suggested collagen disease of the scleroderma type. The history was that two and a half years earlier there was gradual onset of illness, with loss of appetite and well-being and a fall in weight. She became "grizzly" and would cry on the slightest provocation. Six months later she began to complain of pain in the wrists and ankles, and the left knee became swollen. She began to limp, and it was noted that the right leg was wasting. Six months later again she attended the Royal Children's Hospital, by which time the wasting of the right thigh and calf was pronounced. The tendon reflexes were normal, and there was no demonstrable muscle weakness. X-ray examination of the pelvis at that time revealed a cystic appearance, probably enchondroma, in the right acetabulum. Three months later she was admitted to the Orthopaedic Section of the Royal Children's Hospital, when the following additional signs were noted: a shiny and atrophic appearance of the skin on the dorsum of both hands, together with wasting of the intrinsic muscles; some swelling of the interphalangeal joints and limitation of movement of the fingers and wrists; loss of elasticity in the tissues of the lower part of the right thigh, the right calf and the right arm, with a feeling of "woodiness"; areas of localized atrophy and depigmentation of the skin behind the right knee; hoarseness of the voice; a suggestion of "butterfly" erythema of the cheeks and eyelids. But apart from all those signs, the most striking presenting feature was the deep apprehension and misery of the little girl.

DR. GALBRAITH said that the change following the use of cortisone was most dramatic. Within a few days there was improvement, and within ten days she became again a happy, active child, skipping about and free from apprehension. On the other hand, the appearance of the affected leg had changed very little. The dosage of cortisone had not been heavy, 75 milligrammes being given daily for four months, the dose then being gradually reduced. For two months cortisone therapy was suspended, but for the past four months it had been necessary to give a daily maintenance dose of 25 milligrammes. Blood examinations, estimation of the erythrocyte sedimentation rate and of the blood urea level, serum agglutination tests, estimations of urinary chloride excretion and X-ray examinations of the long bones and the spine revealed no abnormality. The urinary calcium excretion was slightly increased. Investigation of the serum proteins had again shown the abnormality consistent with the collagen disease, with diminished albumin content (34.7%) and an increase in globulin content, particularly in α_1 (10.6%), α_2 (14.37%) and γ globulin (26.5%).

Turner's Syndrome.

DR. ELIZABETH TURNER showed three patients suffering from Turner's syndrome; the eldest was aged eight years, the next was aged four years, and the third was aged twelve months. DR. TURNER pointed out that all the children presented the features typical of the condition—namely, *pterygium colli* (or webbed neck) with low hair-line, *cubitus valgus*, and infantilism or retarded growth. The two eldest children had radiologically confirmed coarctation of the aorta, whilst the baby, who had no palpable femoral pulses, had not been further investigated. The child aged four years (the subject of a paper published in THE MEDICAL JOURNAL OF AUSTRALIA) also had renal and digital abnormalities. All three children had normal external female genitalia, and one, the only one investigated, was proved to have a small uterus and Fallopian tubes; but examination of scrapings from the buccal mucosa of the two older children had failed to demonstrate any female sex chromatin material. It had thus to be presumed that the children were genetically male. A striking feature of all three children was the presence of lymphangiectatic oedema of both hands and feet in infancy, which tended to disappear by the age of two years; dystrophy of the nails occurred in all. All three children had a typical physiognomy, so that they were mistaken for sisters by some of the visiting

medical practitioners. There were prominent epicanthic folds, *retroussé* nose, and a somewhat triangular mouth with drooping corners and malocclusion. All three children were well and happy, and it had been noted by two of the parents, who had other normal children in the family, that the affected children played in a more aggressive "tomboy" fashion than their sisters. Apart from possible surgical intervention for the coarctation of the aorta, no specific therapy was contemplated until the children reached puberty, when hormone substitution therapy to produce breast growth and menses would be considered.

Tuberous Sclerosis.

Dr. Turner also showed two children suffering from tuberous sclerosis or *epiloia*. One infant, a male, aged three years, had a family history in which many cases of mental deficiency had been noted, and a grandparent had suffered from a disease considered to be von Recklinghausen's neurofibromatosis. The patient shown had multiple skin xanthomata and numerous *café-au-lait* spots on the trunk, with numerous fibrous skin tumours also. The child had progressed normally until the age of seven months, when minor epilepsy had commenced, and later fits of screaming, irritability and progressive dementia had occurred; the child could now walk with aid, but was rapidly losing even that power.

The other child was a female, aged five years, in whose family no other evidence of the disease could be discovered. The child had progressed normally until the age of ten months, when convulsions began. They had been controlled by anticonvulsant drugs, but gross psychic deterioration had occurred, so that the child, although now quiet, recognized no one and sat engrossed in bizarre hand play and grimacing. Areas of depigmentation and fleshy tumours had been noted on the skin since birth. The child also had the typical butterfly distribution of the so-called "*adenoma sebaceum*" on the face. The child had become destructive and cruel to her siblings, and had been committed to an institution for mental defectives.

Dr. Turner also showed preserved specimens of a brain removed from another patient who had died at the hospital, in which were tuberous gliomatous masses throughout the cerebral tissues; some protruded far into the ventricles, and apparently occluded the aqueduct of Sylvius, and others presented on the surface of the brain as yellowish masses.

Rubella and its Teratogenic Effects.

DR. DAVID PITTS, with the aid of diagrams and audiograms, discussed the adverse effects on the fetus of rubella contracted during pregnancy. After outlining the historic discoveries of Gregg and Swan, he gave figures relevant to the abnormality rate, both as calculated in Australia, and as found by overseas observers. The great difference between the two sources of information was discussed, and attributed to statistical and other miscalculations in some of the Australian papers.

Meningitis.

DR. ROBERT SOUTHBY showed a series of patients in order to illustrate the results of treatment of meningitis.

The first patient was a girl, aged five years, who had suffered from pneumococcal meningitis two years previously. The history was a short one of two days' fever, malaise and headache, with drowsiness and irritability. The cerebro-spinal fluid was purulent and loaded with pneumococci, the presence of which was confirmed by culture. The child was treated intensively with crystalline penicillin given intramuscularly, but with no intrathecal therapy. She responded in a very gratifying manner, and presented at the meeting as a healthy little girl who was doing everything normal for a girl of her age; there had been no untoward sequelae.

The second patient was a boy, aged three years, who twelve months earlier had been treated for acute meningitis due to *Hemophilus influenzae*. He had no intrathecal therapy apart from an initial dose of penicillin and streptomycin preparatory to the confirmation of the diagnosis by the laboratory. The boy had been treated with sulphonamides and streptomycin, plus "Aureomycin" given intravenously when the former remedies did not seem to be sufficient. His response then had been dramatic, and at the time of the meeting he presented as a normal boy for his age.

The third patient was a girl, aged eighteen months at the time when she had contracted meningococcal septicæmia and meningitis some nine months earlier. She responded to intensive intramuscular penicillin therapy without any other specific form of treatment.

The fourth patient was a boy, aged thirteen years, who had been presented at the corresponding meeting two years earlier, having been cured of tuberculous meningitis after nearly fifteen months of treatment with streptomycin, given intrathecally for nine weeks, and intramuscularly for the remainder of the first year, and in addition para-aminosalicylic acid for fifteen months. The boy had been back at school for two years; although he had been somewhat retarded before the illness, he was now at his local State school and coping with his lessons very well. There were no physical sequelæ apart from indications of a few healed choroidal tubercles. He had also suffered from generalized miliary tuberculosis throughout both lungs, which had cleared almost completely after three months of intensive treatment.

Dr. Southby's fifth patient was a boy, aged six years, who had presented seven months previously with an indefinite illness of short duration, and had been almost comatose on his admission to hospital. He had been treated with a combination of streptomycin, PAS and isoniazid; intrathecal therapy had been continued for four weeks. After he had recovered from the coma at the end of his first fortnight he was found to have developed right-sided hemiplegia; that had now decreased considerably. Otherwise he presented as a lively and active boy for his age.

The sixth patient was a boy, aged three years, who had a short history of fever, malaise and headache, and pronounced irritability, which had culminated in a mild convulsive seizure, after which he had been admitted to hospital unconscious and very ill. As in the previous two cases, the diagnosis had been confirmed by identification of tubercle bacilli in the cerebro-spinal fluid and in culture. The patient responded so well to the triple treatment that at the end of ten days he was able to sit up in bed and feed himself. At the time of the meeting, just one month after his admission to hospital, he appeared to be a perfectly healthy child with no obvious sequelæ. He had had two weeks of intrathecal therapy, and it was proposed to continue the intramuscular administration of streptomycin for about twelve months and of the other preparations for approximately eighteen months.

Dr. Southby said that he believed that patients suffering from tuberculous meningitis could now be treated without intrathecal therapy, especially with the advent of isoniazid. He stressed the happy contrast at the present time between the outlook for the patient suffering from any form of meningitis and that existing in the pre-chemotherapy and pre-antibiotic days. The majority of such patients now recovered not only with their lives, but without serious sequelæ.

Diarrhoea.

DR. MONA BLANCH discussed in detail the aetiology, differential diagnosis and treatment of diarrhoea in infancy and childhood. She stressed the importance of a full history, particularly in regard to diet, in order to discover the underlying cause of the trouble. Dr. Blanch pointed out the characteristics—an acute onset with blood and mucus in the stools—of dysentery due to *Shigella* or *Salmonella* infections. She said that stools could be sent to a private pathologist or to the public health laboratory for cultural examination, but only if *Shigella* was grown would chemotherapy be curative. In all cases, when dehydration did not necessitate intravenous therapy, treatment at home should be possible. Dr. Blanch suggested a routine in which the child was given glucose in water (four tablespoons to one pint) for twelve to twenty-four hours. When vomiting was a feature, the administration should be started with one teaspoon every five minutes for half an hour, the amount and interval being doubled until the child was receiving reasonable quantities without vomiting. A change could then be made to sweetened condensed milk solution, one in ten increased to one in eight, and finally, when diarrhoea had ceased, there should be a gradual return to normal diet.

In discussing diarrhoea of long standing, Dr. Blanch stressed the likelihood of excess roughage, excess fat, too frequent feeding, milk allergy or over-anxiety in the mother or child as a cause. She presented histories illustrating the cure of diarrhoea by adjustment of diet in such cases.

Finally, Dr. Blanch showed a boy, aged fourteen months, who had had diarrhoea since the age of four months. He was eventually found to have the whole colon on a long mesentery, and when it was fixed at the hepatic and splenic flexures he ceased to have the frequent passage of liquid stools (up to 20 in a day). He had gained weight well on a normal diet, although he often passed two to four firm or loose stools daily.

Teaching the Diabetic Regime.

DR. GERALDINE AMIES demonstrated teaching methods used in the diabetic regime for both parents and patients. The demonstration included the following: diet weighing and substitutions, particularly of emergency feedings; modern urine testing techniques, including the newest "Testape" (Lille); injection techniques with suitably marked syringes (British and American) and with a complete series of self-injectors now available; products of low caloric value, which had originated from the diabetic clinic, and which were now made commercially in Victoria (they were available to be tested). Photographs of diabetic children's camps held by the Royal Children's Hospital were shown as a teaching aid.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

AN UNFORTUNATE VOYAGE.¹

CAPTAIN EDWARD MANNING in command of the Ship Pitt conveying soldiers and convicts to Port Jackson on 9 February 1792 as follows (extract): "From St. Jago hither I have experienced nothing but adversity—attributing the groundwork of our misfortunes to the lateness of the season when we left England. At St. Jago the season was bad, and the heat of the sun intolerable. We left it about the 20th of August and were nearly a month in a very distressed situation—almost calm the whole time with incessant rain—sometimes a few miles to the southward of the sun, and sometimes a few miles to the northward, most frequently without the slightest breath of air, but frequently very heavy squalls with the severest lightning and thunder I was ever witness to in the whole course of my life.

A continuation of such weather with so many confined in so small a space, brought forth a most malignant epidemical fever, which spread so rapidly among the sailors and soldiers and in a degree so alarming that for some time we were almost afraid to approach each other. There were very few on board who escaped its fury. For a considerable time our scene was truly melancholy: in fourteen days we buried twenty seven seamen, soldiers, their wives and children, scarcely a person escaped death, who was watering on shore at that d—d place St. Jago.

But extraordinary as it is to tell, it is not more extraordinary than to me, that the fever never touched the convicts, among whom one might naturally have concluded that it would have been most fatal: we have not buried one since we left Praya. But though they have been proof against the fever yet they have in other instances not been exempt from affliction.

The flux and scurvy attacked them without mercy. Never were seen I believe such ulcers and ulcerated legs in this world. The smallest appearance on the flesh in a day or two made its way to the very bone and many of the soldiers experienced equal calamity.

Eventually they arrived at Rio de Janeiro, where the invalids were sent either to hospital or to a convalescent camp, and with fresh fruit and meat available in abundance there were no further deaths.

Correspondence.

JOHN PARK.

SIR: Today, December 1, is a great day for Australia at the Olympics. Listening by the radio, my thoughts turn to the memory of the late Dr. John Park, of Melbourne, and to the manner of his death. I met him in Malaya in 1941 with the

¹ From the original in the Mitchell Library, Sydney.

Australian Army Medical Service, a tall athletic young man, a fine man both in looks and in manner, of whom Colonel W. S. Kent Hughes said in those days: "He may be one of our Olympic representatives some day." But fate and his own ideals of courage and of duty decreed otherwise.

On the fateful Sunday of February, 1942, when the Japanese crossed the Straits of Johore and attacked Singapore Island, Captain Park was in charge of an advanced ambulance dressing station near Tanga, probably seven or eight miles north and west of Singapore City. The 2/20th Australian Battalion held that part of the water's edge a couple of miles north of Tanga. This battalion was overwhelmed and surrounded; and the regimental medical officer, himself wounded, filled a truck with wounded men and escaped southwards. As he passed John Park's post he told the latter that some Australian wounded were still lying up there but no vehicle or driver. Without hesitation, consultation or loss of time, for there was no time to be lost, John Park took an ambulance car and two volunteer medical orderlies from 2/9th Field Ambulance, and they disappeared northwards into the battle smoke, into the shells and machine guns and into the midst of a barbarous and unknown enemy. I do not know whether the bodies of these three brave men were ever found and identified. I was with a hospital unit many miles away the other side of the city. I only know that in the confusion of the last days before our surrender and in the years of imprisonment that followed, this epic of the medical service in action seems to have vanished into the limbo of forgotten things. There must be few Victoria Crosses that were better earned than this lone and desperate attempt.

Even if it be too late for some military recognition, is there some plaque or memorial tablet in any of our medical halls? I would gladly subscribe to such a plan.

Yours, etc.,

C.H.

Box 463,
Broken Hill,
December 1, 1956.

UPPER RESPIRATORY TRACT INFECTIONS IN CHILDREN.

SIR: May I congratulate Dr. S. E. J. Robertson upon his essentially practical handling of this difficult subject, as published in the Journal of December 1, 1956. In particular must I agree with his remarks about the harm that can be done by the prolonged and indiscriminate use of nasal drops.

I was most surprised therefore that during the discussion that followed the paper one speaker, who was a senior ear, nose and throat surgeon, was reported as saying that "in general they (nasal drops) were harmless, that they could be used over a long period of time." The speaker then enumerated a number of preparations which he used for long periods, "and he had never seen harmful effects from them".

I have no hesitation in expressing the belief that intranasal medication is one of the most abused forms of therapeutics practised, and the multiplicity of proprietary preparations available bears witness to this. In infective conditions of the nose and paranasal sinuses, pathogens which are causing morbid changes have already invaded the subepithelial layers and are therefore not accessible to local medication. Those organisms that can be destroyed by the medication are lying on the surface of the muco-ciliary blanket and would be swept into the naso-pharynx anyhow.

With the exception of such chronic conditions as atrophic rhinitis, where the nasal epithelium has undergone a metaplasia to a more squamous form, the object of the use of nasal drops should be only to promote drainage around the sinus ostia and allow the muco-ciliary stream to do the rest. If the drops have not achieved this within a week, more radical measures are usually indicated, and their continued use has no scientific basis.

Probably the least harmful and the most satisfactory preparation is ephedrine sulphate in normal saline in concentrations up to 2%, and even these if used indefinitely will establish what I call a chemical rhinitis. The usual story from the patient is that for some reason or other nasal drops are used, and because the symptoms have not cleared in several days something stronger is sought. Several days later for the same reason something even stronger is sought. Eventually after weeks of this self-abuse and because the nasal symptoms are becoming worse, further expert advice

is sought. By this time nasal drops are usually stinging the nose when introduced and are producing only a very transitory improvement in the airway. The nasal mucosa is extremely reddened and edematous and is bathed in an excessive serous exudate.

Improvement occurs immediately all intranasal medication is suspended. The recovery can be hastened by taking ephedrine by mouth for a week or so. Mild sedation also helps, as by this time most of the patients are highly disturbed by the degree of progressive nasal discomfort they have been suffering.

I can produce a number of case histories of patients whose severe nasal catarrh has disappeared when they ceased indulging in nasal medication. I would urge Dr. Robertson to continue to hold his own opinion in the matter and not to "defer to more senior opinions".

Yours, etc.,

G. K. VINCENT.

Cronulla,
New South Wales,
December 6, 1956.

INJURIES TO ATHLETES.

SIR: As a pharmacology B.Sc., I am somewhat diffident about approaching your journal on what is essentially a medical topic. However, I do feel some explanation of recent statements in the Melbourne Press is required. It seems that several Australian competitors in the recent Olympic Games have been given some sort of local anaesthetic to relieve pain in injured limbs in order that they might compete in further events—one pentathlon contestant had an injury to his shoulder caused by penetration of a foil at fencing which prevented him from raising his arm. All were apparently treated and allowed to perform in later events.

What troubles me is the possible effect further muscular effort would have on the injured tissues of the athletes. I would be most grateful for your comments on this matter, for I feel the clarification of this issue in an athletically minded country would be most useful.

Yours, etc.,

ALEX. W. MACFARLANE.

7 Lytton Street,
Kew, E.4,
Melbourne.
December 3, 1956.

[This letter was referred to Dr. H. G. Furnell, who was in charge of medical arrangements at the Olympic Games. He has sent the following reply.]

SIR: Thank you for sending Mr. W. Macfarlane's letter. The matter he raises is of great interest, and I think merits full discussion. There were other incidents at the Games of similar nature, including one in which serious injury to a tendon occurred, I am informed, after injection of a local anaesthetic.

I feel that orthopaedic surgeons, and others who are in the habit of treating athletic injuries, could make valuable contributions to this subject, and I would like to see their views expressed in your pages.

Yours, etc.,

H. G. FURNELL.

33 Collins Street,
Melbourne,
December 11, 1956.

Obituary.

LESLIE JAMES WOODLAND.

We are indebted to Dr. F. H. McClements Callow for the following appreciation of the late Dr. Leslie James Woodland.

L. J. Woodland was the youngest man in the year when we enrolled for the medical course in 1921. He came from St. Patrick's school at Goulburn with fair upstanding hair. It was soon obvious that he did not intend to waste time and showed himself a keen and almost intense student. He graduated

at the age of twenty-one years and was appointed to the resident medical staff at Royal Prince Alfred Hospital. After his work on the resident staff he practised in the country for some years and then went abroad for further surgical training. He took his Fellowship of the Royal College of Surgeons of Edinburgh in 1939, but his further work in England was cut short by the war. He then commenced practice as an orthopaedic surgeon in Sydney and was appointed to the staff of the Royal Prince Alfred Hospital, of which he was an honorary orthopaedic surgeon at the time of his death. He was also honorary consultant orthopaedic surgeon to the Rachel Forster Hospital for Women and Children and to Lewisham General Hospital, and honorary assistant orthopaedic surgeon to Canterbury District Memorial Hospital.

Woodland applied himself to his work with an intensity that made it obvious to his colleagues that his health must suffer. He was never able to shed his concern about his patients and confessed to sleepless nights worrying about them. He retained a keen interest in cricket and football and was an active tennis player till the moment of his death, as he died on the court at his home. His work had been continued without modification over the past few years, although he was aware of the danger involved, but he was not the type of man to work at a slower pace because of his own health. Vale, "Woody"!

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 72, of December 6, 1956.

AUSTRALIAN MILITARY FORCES.

Citizen Military Forces.

Northern Command.

Royal Australian Army Medical Corps (Medical).—The provisional appointment of 1/46809 Captain P. J. Millroy is terminated, 28th October, 1956.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—2/206951 Colonel E. F. Thomson relinquishes command 1st General Hospital, 31st December, 1956, and is appointed Deputy Director Medical Services, Headquarters Eastern Command, 1st January, 1957.

Southern Command.

Royal Australian Army Medical Corps (Medical).—3/101032 Honorary Captain G. J. Little is appointed from the Reserve of Officers, and to be Captain (provisionally), 24th September, 1956.

Royal Australian Army Medical Corps (Medical).—The provisional appointment of 3/111532 Captain H. A. Marks is terminated, 3rd August, 1956. To be Captains (provisionally): 3/111532 Howard Alfred Marks, 4th August, 1956, and 3/55498 John Littleton Blunt, 2nd November, 1956.

Central Command.

Royal Australian Army Medical Corps (Medical).—To be Captains (provisionally), 2nd November, 1956: 4/32082 Lehonde Lucas Hoare and 4/32083 John Malcolm Collins.

Western Command.

Royal Australian Army Medical Corps (Medical).—5/26529 Captain (provisionally) M. Traub is seconded whilst in the United Kingdom, 30th September, 1956. The provisional appointment of 5/26529 Captain M. Traub is terminated, 29th September, 1956. To be Captain (provisionally), 30th September, 1956: 5/26529 Max Traub.

Tasmania.

Royal Australian Army Medical Corps (Medical).—6/15392 Honorary Captain L. M. Jacks is appointed from the Reserve of Officers, and to be Captain (provisionally), 18th October, 1956.

Reserve Citizen Military Forces.**Royal Australian Army Medical Corps.**

Northern Command.—The resignation of Honorary Captain W. J. Hamilton of his commission is accepted, 12th October, 1956.

Southern Command.—Honorary Captain E. L. Fargie is retired, 31st October, 1956. To be Honorary Captain, 17th August, 1956: Chester Alan Troy.

Retired List.**Royal Australian Army Medical Corps.**

The following officer is placed upon the Retired List, with permission to retain his rank and wear the prescribed uniform:

Western Command.—Captain S. N. Michaels, 22nd October, 1956.

Congresses.**INTERNATIONAL EXHIBITION OF MEDICAL ARTS.**

THE third International Exhibition of Medical Arts, sponsored by the *Minerva Medica* Press Group and the Italian Medical Association will be held at the Palace of Exhibitions in the Valentino Park, Turin, from June 1 to 9, 1957. The display will include recent achievements in the fields of medicine, surgery and hygiene. There will also be a number of conferences on medicine, surgery and pharmaceutical technique, a scientific exhibition and the third International Festival of the Scientific Medical Film. Further inquiries may be addressed to the Secretary-General of the Exhibition, *Minerva Medica*, C. Bramante, 83-85, Torino, Italy.

Notice.**RETURN OF THANKS.**

LADY WHITBY AND FAMILY desire to express their warmest thanks to the many friends and colleagues of the late Sir Lionel Whitby who so kindly sent messages of sympathy and condolence in the loss they have sustained.

Nominations and Elections.

THE undermentioned have applied for election as members of the South Australian Branch of the British Medical Association. Unless otherwise stated, they graduated in November, 1956, at the M.B., B.S. examination, but have not yet been admitted to their degrees.

Anderson, John Brayton, Repatriation General Hospital, Springbank, South Australia.

Bonner, Brian Christopher, 72A Forest Avenue, Black Forest, South Australia.

Brummit, Peter Elliott, 11 Northcote Terrace, Medindie, South Australia.

Chambers, Gordon Manson, 1 Piccadilly Circus, Reade Park, South Australia.

Cohen, Brian Garland Dunstan, 2 Edwin Avenue, Collinswood, South Australia.

Glynn, Maxwell Allan, 1 Balham Avenue, Kingswood, South Australia.

Jose, John Salisbury, 58 Brougham Place, North Adelaide, South Australia.

Leditschke, John Frederick, 9 South Terrace, Adelaide, South Australia.

Lindsay, Thomas Bruce, 661 Esplanade, Grange, South Australia.

McQuade, Joseph Aloysius, 23a Naldara Street, Glandore, South Australia.

Tucker, William George, 11 View Street, Lower Mitcham, South Australia.

Ritenis, Indulis, M.B., B.S., 1955 (Univ. Adelaide), 23 Barnes Avenue, Magill, South Australia.

Schaefer, Ronald, M.B., B.S., 1956 (Univ. Adelaide), 37 Windsor Street, Largs Bay, South Australia.

The undermentioned has been elected as a member of the South Australian Branch of the British Medical Association: Forbes, James Ian, M.B., B.S., 1955 (Univ. Adelaide).

The undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Gray, Ronald Wallace Menzies, M.B., B.S., 1944 (Univ. Sydney); Szeps, David, regional registration for practice in Ungarie, New South Wales.

Medical Appointments.

Dr. Robert Hecker has been appointed honorary assistant visiting medical officer at the Royal Adelaide Hospital.

Dr. John Hudson Begg has been appointed honorary clinical assistant at the Royal Adelaide Hospital.

Dr. Murray Bowering Wood has been appointed officer of health for Leigh Creek, South Australia.

Diary for the Month.

JAN. 7.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 JAN. 8.—New South Wales Branch, B.M.A.: Council Quarterly.
 JAN. 11.—Queensland Branch, B.M.A.: Council Meeting.
 JAN. 11.—Tasmanian Branch, B.M.A.: Branch Council.
 JAN. 14.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

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VOL. II.—43RD YEAR

SYDNEY, SATURDAY, DECEMBER 29, 1956

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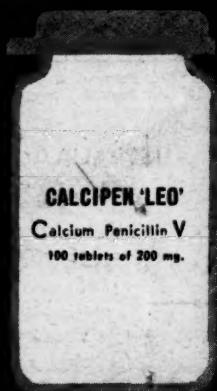
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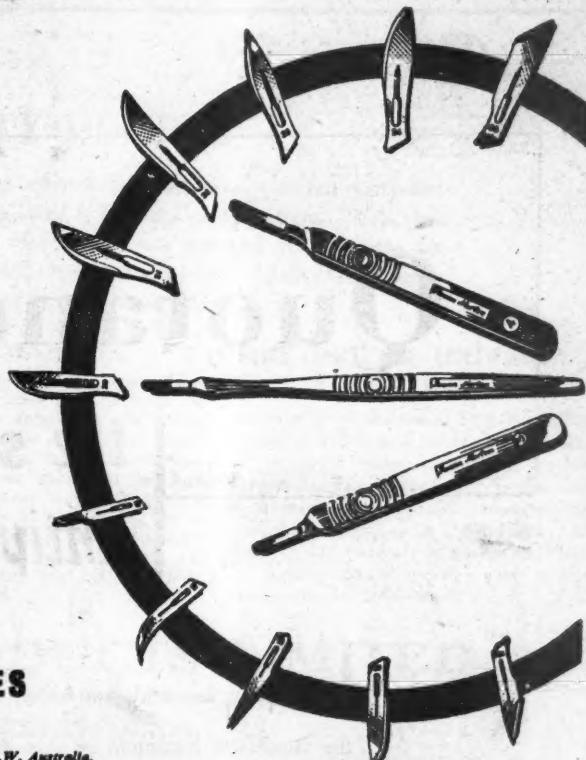
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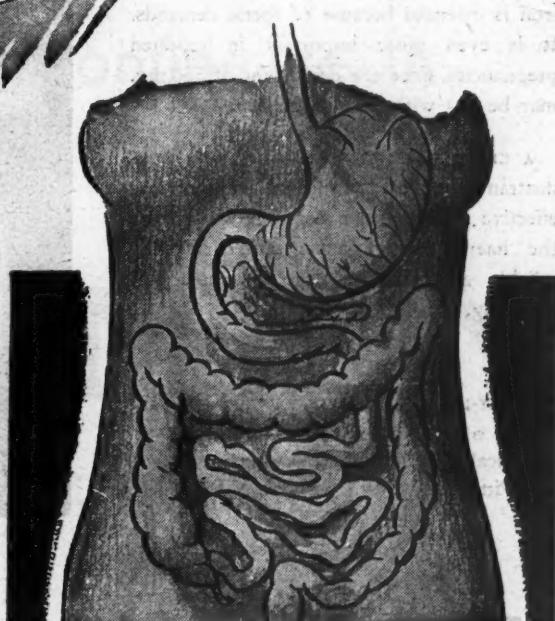


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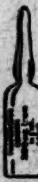
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PRESENTS

Gentersal CREAM

GENTIAN VIOLET
ALKYLDIMETHYL-BENZYLAMMONIUM CHLORIDE

0.05% W/W
0.05% W/W

NEW effective therapy for moniliasis

*Large tubes with 15
DISPOSABLE vaginal applicators.*

- More effective
- Less leakage
- Less irritating
- Less staining

Clinical experience with GENTERSAL Cream has been outstanding. Response is rapid, irritation rare. One investigator reports that every patient " . . . became asymptomatic within 24-28 hours after treatment started." ¹

Efficacy is unusually high. In one 11-month study, 72 per cent. of the patients were cured after one course of treatment, 22 per cent. after two courses, the remaining six per cent. after three to five courses. NOT A SINGLE FAILURE WAS REPORTED. ²

Patients find GENTERSAL Cream easy to administer, appreciate the fact that it stains lightly, or not at all if a sanitary napkin is worn during treatment. If this is not done, soap and water will completely remove stain. Because it is a cream, leakage is minimal. From the patient's as well as the physician's point of view, GENTERSAL Cream is outstanding for the treatment of vulvovaginal moniliasis.

- Vaginal candidiasis (moniliasis) before treatment.

- Same patient after treatment with Gentersal Cream.

REFERENCES: 1. Leibfried, J. J.: To be published. 2. Perl, G.; Guttmacher, A. F., and Jakubowicz, H.: Obst. & Gynec. 5:640, 1955.



ORTHO PHARMACEUTICAL COMPANY, SYDNEY



*For infections of the mouth and throat and
for the relief of sore throat and laryngitis*

Introducing 'HIBITANE' antiseptic lozenges

Containing the new I.C.I. antiseptic 'Hibitane' Chlorhexidine • Formula: 'Hibitane' Dihydrochloride 5 mg.
Benzocaine B.P. 2 mg.

ADVANTAGES

1. Powerful antibacterial effect against Gram-positive and Gram-negative organisms. Also active against Monilia and Aspergillus.
2. The saliva produced when sucking a lozenge is highly bactericidal to mouth pathogens. Saliva tests show 'Hibitane' lozenges to be far superior to other antiseptic lozenges.
3. Low oral toxicity; harmless to the tissues locally.
4. No sensitivity reactions, local or general, have been reported with 'Hibitane'.
5. Bacteria do not develop resistance to 'Hibitane', nor can resistance be induced *in vitro*.
6. The lozenges are pleasantly flavoured and well liked by children.

'Hibitane' Lozenges are issued in tubes of 12 Lozenges
and in bottles of 250 Lozenges.



Marketed in Australia by

IMPERIAL CHEMICAL INDUSTRIES OF AUSTRALIA & NEW ZEALAND LTD.

A product of Imperial Chemical (Pharmaceuticals) Ltd. Subsidiary of Imperial Chemical Industries Ltd., England.

DRAMAMINE® IN VERTIGO

Labyrinthine Disturbance

Long recognised as a standard for the management of motion sickness, Dramamine has become accepted in the control of a variety of other clinical conditions characterised by vertigo.

Vertigo, according to Swartout, is primarily due to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic centre to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Meniere's syndrome, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"† of the tissues including the end organs (gastro-intestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. in bottles of 12, 36, 100 and 1000 tablets and in cartons (10 strips of 10 tablets). G. D. Searle & Co., Ltd., High Wycombe, Bucks., England.

Sole Distributors for Australia: Nicholas Proprietary Ltd., 37, Swanston Street, Melbourne, C.1.



The site of Dramamine's action is probably in the labyrinthine structure.

* Regd. Trade Mark

†Swartout, R., III, and Gunther, K.: "Dizziness": Vertigo and Syncope, G.P. 8:35 (Nov.) 1953.

SEARLE



SIGUENT HYCOR contains 1% hydrocortisone acetate in a soothing anhydrous ointment base.

SIGUENT HYCOR is indicated in

Atopic dermatitis (including infantile eczemas).
Contact-type allergic eczematous dermatitis.
Otitis externa, i.e., "eczema" of the ear canal.
Nummular eczema.
Seborrhoeic dermatitis.
Pruritus ani et vulvae.
Exfoliative erythrodermas of eczematous or seborrhoeic type.
Eczematous, patchy and lichenified eruptions of the eyelids, neck, face, etc., as seen particularly in older women.

SIGUENT HYCOR advantages

- (a) Effective anti-pruritic action.
- (b) Absence of allergic sensitization following prolonged usage (such as occurs with anti-histamines).
- (c) No systemic reaction because of little or no absorption.
- (d) Non-staining; no disagreeable odours; cosmetically acceptable.
- (e) No "stinging" or "burning".
- (f) Prolonged usage does not interfere with initial efficacy.

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The Wholesale Drug Co. Ltd., Sydney.
Queensland Druggists Ltd., Brisbane.

Southern Drug Co. Ltd., Adelaide.
Rumbles Ltd., Perth.

For the treatment of
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NEPHROPTOSIS**



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TRADE MARK
Berlei SUPPORT

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Easily adjusted by the patient in the partial Trendelenburg position, the Camp Berlei Support gently lifts the abdominal contents and firmly holds the position by the pressure supplied to the webs attached to self-locking buckles. Comfortable uplift is maintained throughout the patient's normal working day.

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A new bearing on Gastro - Enteritis

Emphasis has been given recently to the use of combined chemotherapy in infections and the merit of the judicious combination of antibiotics and sulphonamides in the prevention of bacterial resistance. In the treatment of many infections of the gastro-intestinal tract, combined therapy with streptomycin and sulphaguanidine is a distinct advance on previous forms of treatment.

Guanimycin, in which oral streptomycin sulphate is combined with sulphaguanidine, is indicated in the treatment of gastro-enteritis, bacillary dysentery, summer diarrhoea, *Salmonella* food poisoning, and other mixed infections of the gastro-intestinal tract in infants, children and adults.

A single bottle of Guanimycin, or in severe cases two bottles, will eradicate nearly all cases of enteritis within 24-48 hours.

Guanimycin is issued as a free-flowing powder from which a smooth, palatable, homogeneous suspension may be made by simple mixture with water.

GUANIMYCIN

Trade Mark

ORAL STREPTOMYCIN SULPHATE with SULPHAGUANIDINE

In bottles to prepare 4 fluid ounces.

Literature on application.

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A new product PACATAL*

n-Methyl-piperidyl-(3)-methyl-phenothiazine

a powerful yet safe tranquillizing drug.

Its effectiveness in mental disorders range from the psychoneuroses to the psychoses. In mild or severely disturbed states . . . anxiety, restlessness, excitement and abnormal behaviour . . . PACATAL reduces tension, makes the patient quieter, less confused — but still alert, objective, cooperative amenable to psychotherapy. In addition Pacatal is a potentiator of anaesthetics and sedative-hypnotics. It is a valuable drug for both premedication of the patient and use during surgery.

PACATAL can be administered with complete confidence for it is of very low toxicity.

and uniquely free from such troublesome side-effects as skin rashes, jaundice, Parkinson symptoms, orthostatic collapse and tachycardia. As a further safeguard, PACATAL is rapidly absorbed and quickly eliminated, thus ensuring against cumulative dangers.

PACATAL is available in tablets for oral administration and ampoules for parenteral use.

Tablets: 25 mg. in bottles of 100 and 500. Ampoules: 2 c.c. (25 mg./c.c.) in boxes of 6 and 100.

* Reg. T. Mark

William R. Warner & Co. Pty. Ltd.

SERVING THE MEDICAL PROFESSION SINCE 1856
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REPATRIATION DEPARTMENT, VICTORIA.

MEDICAL OFFICERS,
PSYCHIATRY UNIT.

APPLICATIONS are invited from medical practitioners for appointment, immediately or in 1957, to the Psychiatry Unit, particularly potential candidates for the Diploma of Psychological Medicine.

The Psychiatric Unit offers an excellent opportunity of gaining experience in the investigation and treatment of psychiatric cases at the Repatriation General Hospital, Heidelberg, the "Rockingham" Convalescent (re-socialisation) Home, Kew, and the Out-Patient Clinic, St. Kilda Road, and Mental Hospital, Bundoora.

Salary: £1857-£2297.

(Commencing salary, within range, will be determined on qualifications and post-graduate experience.)

Applications, stating date and place of birth, professional qualifications and experience, hospital and other appointments, war service (if any) and when available to commence duty, to Deputy Commissioner, Repatriation Department, Box 87A, G.P.O., Melbourne, C.1.

SYDNEY: ST. GEORGE DISTRICT. Old-established practice averaging £22,000 gross. One-third share for sale, £4250. Suitable experienced general practitioner. Reply No. 831, c.o. this office.

STATE OF TASMANIA: ROYAL HOBART HOSPITAL

MEDICAL STAFF APPOINTMENTS.

APPLICATIONS, addressed to the General Superintendent, are invited from duly qualified and registered medical practitioners to the following vacancies:

Radiological Registrar.

Salary on appointment £1531 per annum. On obtaining higher qualification, £1781 per annum.

This position is for one year, extendable to a maximum of two years.

Resident Medical Officers—two (2) vacancies.

Salary: 1st year after graduation, £1081 10s.; 2nd year after graduation, £1206 10s.; 3rd year after graduation, £1331 10s.; 4th year after graduation, £1456 10s.

No deduction is made for board and residence in either of the above vacancies, but, in addition, £120 per annum is added to married officers required to live out.—H. M. Wright, Secretary.

NUCLEUS OF PRACTICE OFFERED—inner busy Sydney suburb—half or full share. Independent rooms available. No capital essential. Reply No. 842, c.o. this office.

ASSISTANT, VIEW EARLY PARTNERSHIP, REQUIRED for long-established two-man coastal practice near Sydney. Good hospital facilities. Salary £2000 plus car expenses and modern flat provided. Reply No. 841, c.o. this office.

CUNNAMULLA HOSPITAL, QUEENSLAND.

MEDICAL FELLOW.

APPLICATIONS are invited for the position of Medical Superintendent of the above hospital. Salary range £1225 to £1350 p.a. with right of private practice. Commencing salary according to qualifications and experience. Residence and surgery available at nominal rental. Daily average in-patients approximately 15 and out-patients 25. Present nursing staff comprises matron, five sisters and five assistants in nursing.

Successful applicant, who must become registered in Queensland, required to take up appointment on or about 1st February, 1957.

Applications close with Secretary, Cunnamulla Hospitals Board, P.O. Box 28, Cunnamulla, at 5 p.m. on 16th January, 1957.

FOR SALE: Short-wave and electro-surgical unit in excellent working order. Extra pads. Large Wat-Vic ultra-violet lamp. Ring XL 1052 (Melbourne) or write to No. 847, c.o. this office.

PRACTICE FOR SALE. South Australia west coast town. Local hospital. House to rent Goodwill £2000. Easy terms: no deposit. Reply No. 846, c.o. this office.

YOUNG MARRIED PHYSICIAN, graduated six years, M.R.C.P., M.R.A.C.P., desires assistantship with view, preferably eastern suburbs, Sydney, and with accommodation. Reply No. 845, c.o. this office.

APPLICATIONS are invited from graduates in medicine for Research Fellowship to undertake research into etiological aspects of skin cancer. Salary range £12300 p.a. with commencing salary according to experience and qualifications. Appointment is initial for one year, renewable annually subject to satisfactory work, to be reviewed at the end of the year.

Applications close on January 15, 1957, with the Registrar, University of Queensland, Brisbane, to whom further particulars may be obtained.

IPSWICH HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are invited for appointment as a Resident Medical Officer at the Ipswich Hospital, Queensland. The present salary is £1105 10s. to £1225 per annum.

Applications, stating date and age, qualifications and previous experience, are to be forwarded to the Secretary, Ipswich Hospital Board, Ipswich, Queensland.

ASSISTANT WANTED, Part-time, male or female, partnership, in inner S.E. industrial area, Sydney. Live out, reasonable hours. Salary, including living and car allowances, £2250. Commence early January. Reply No. 847, c.o. this office.

BRITISH MEDICAL AGENCY

OF QUEENSLAND PTY. LIMITED

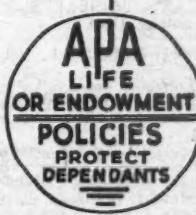
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 BOARD, QUEENSLAND.

MEDICAL SUPERINTENDENT.

RESEARCH
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are invited
 medicine for
 to undertake
 medical aspects
 range from
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 ification is in-
 20 weeks' annual
 work, not less
 the end of the
 on January
 lar, Univer-
 Brisbane, for
 culars may
 be submitted
 to the Board
 for consideration.

APLICATIONS are invited for the position of Medical Superintendent, full time, without the right of private practice. Salary £2075 plus basic wage adjustment and cost-of-living adjustment. Modern unfurnished residence free fuel, light and power. Four weeks' annual leave. Three months' notice either side. Well- equipped hospital. Applications, stating age, marital status, qualifications and experience, close with undersigned on 15th January, 1957. (Signed) A. J. COTHAM.

YCHICIAN REQUIRED for position of Assistant for short period, with view purchase, in a provincial city. To take up consultant and general practice in partnership with surgeon (R.C.S.). Retiring partner travelling overseas in new year. Fully equipped base hospital. Salary £1225 per annum with car expenses. Home available. Applicant must have senior degree in medicine. For further details apply to 334, c.o. this office.

SSISTANT WANTED for eastern suburbs, Sydney, practice. No obstetrics. Liberal time. Salary £2250 p.a. plus £5 weekly car allowance. Reply No. 311, c.o. this office.

DR SALE: Cardiotrace in perfect condition. £160. JY 9581 (Sydney).

BUNDABERG HOSPITALS
 BOARD, QUEENSLAND.

SENIOR RESIDENT MEDICAL
 OFFICER.

APLICATIONS are invited for the position of Senior Resident Medical Officer at Bundaberg Hospital, Queensland. Classification £1270 minimum, £1455 maximum, plus basic wage adjustments £55 10s. per annum. To qualify for minimum salary appointee must have served at least two years as a junior resident. Free board and lodgings provided for single appointees and unfurnished residence available for married appointees with free fuel, light and power. Applicants to state qualifications, experience, age, marital status and particulars of war service, if any. Apply to Secretary, Hospitals Board, Bundaberg, Queensland, not later than 3rd January, 1957.

FOR SALE: examination couches from £17 10s.; surgical instruments cabinet with subcabinet (new), £30; surgical trolley, two shelves, £10; second-hand instruments, etc. F. W. Bowker, 23 Longueville Road, Lane Cove, Sydney. JB 1314.

LOCUM WANTED, lower north coastal town, N.S.W. (two-man practice), for one month from approximately January 3 to January 29. Salary £40 per week plus car and expenses. Reply No. 311, c.o. this office.

STATE OF TASMANIA: ROYAL
 HOBART HOSPITAL.

APPOINTMENT: RADIOLOGICAL
 REGISTRAR.

APLICATIONS, addressed to the General Superintendent, are invited from duly qualified and registered medical practitioners for appointment to the above position.

The position is for one year, extendable to a maximum of two (2) years, commencing in January, 1957.

Salary range: On appointment, £1531 per annum. On obtaining higher qualification, £1731 per annum.

The above salary includes cost-of-living adjustments. No deduction is made for board and residence; in addition £120 per annum is paid to married officers required to live out.

The Royal Hobart Hospital is one of 500 beds with 11,000 admissions and 140,000 out-patient attendances each year.—H. M. WRIGHT, Secretary, Box 495A, G.P.O., Hobart.

ASSISTANT WANTED for central western practice (N.S.W.) with view to partnership or succession. £50 per week including car allowance, and furnished flat provided. Reply No. 731, c.o. this office.

ASSISTANT WANTED, view partnership, outer western suburbs, Sydney. £50 p.w. Accommodation available. Phone UB 2259.

WINTON HOSPITALS BOARD.

BOULLA HOSPITAL, BOULLA,
 QUEENSLAND.

APLICATIONS are invited for the position of Medical Superintendent, part time, at the Boulla Hospital, Boulla, Queensland.

Daily average approximately 4. Salary payable £1450 p.a. with the right of private practice.

Residence available free of rent, and four weeks' annual leave per year on full pay.

Three months' notice on either side to terminate employment.

Successful applicant required to commence duties not later than 23rd January, 1957.

Applications with credentials, stating age, marital status, qualifications, experience and war service, if any, close with the Secretary, P.O. Box 16, Winton, Queensland, on 31st December, 1956.

OPHTHALMIC PRACTICE in pleasant Victorian country centre with public hospital. Good professional rooms on long lease. There are approximately 40 G.P.'s in the district and the practice can be increased. ALLAN GRANT, 54 Collins Street, Melbourne. Phone: MF 4171. Tel: Allura, Melbourne.

WANTED TO SELL OR LEASE, Sydney suburban established practice. Takings £4500. Best position in suburb. Two well-furnished medical rooms. Reply No. 792, c.o. this office.

MEDICAL AGENTS

PRACTICES FOR TRANSFER LOCUMS, ASSISTANTS, ETC.

1. N.S.W. North. Unopposed practice. Gross cash over £5000. Good hospital. Goodwill £3500. W.H. cottage, three bedrooms, etc. £2750.

2. Sydney seaside suburb. Old-established partnership practice. G.C.T. £7500. Surgery nil. Goodwill half-share £2850. Three-bedroom residence to purchase, £4000.

Note: For calls between Christmas and New Year, please ring JJ 3665.

All Enquiries Confidential.

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The name of Goyder has been
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since 1902.

ATHERTON HOSPITAL, QLD.

APPLICATIONS are invited for a Junior Resident Medical Officer at the Atherton Hospital, North Queensland.

Salary classification first year £1040, second year £1160, with further annual increases, plus basic wage adjustment £55 and sustenance allowance £48 per annum with free board and lodgings (single accommodation only available).

Daily average in-patients 90, out-patients 60. Medical staff, medical superintendent and two resident medical officers.

Atherton is situated on the Atherton Tablelands 66 miles from Cairns and is 2000 feet above sea level with communication to all main centres by bitumen road.

Apply SECRETARY, Atherton Hospital Board, Atherton, North Queensland.

INNISFAIL HOSPITALS BOARD, QUEENSLAND.

IMMEDIATE APPLICATIONS are invited for appointment to the undermentioned positions on the Board's staff at Innisfail Hospital.

Senior Resident Medical Officer: £1414-£1493.

Junior Resident Medical Officer: £1054-£1204.

Both classifications are subject to further basic wage adjustments, plus £55 per annum district allowance.

Medical staff comprises Medical Superintendent and two resident medical officers.

Annual leave four weeks.

Single officers provided with free board and lodgings in a self-contained flat which will be made available to married officers subject to arrangement.

Applications stating marital status, age, experience and date available and enclosing copies of testimonials, to be forwarded to the undersigned, from whom further details are available.—

SECRETARY, Innisfail Hospitals Board, Innisfail, Queensland.

WANTED, use of rooms, one or two half-days per week, Macquarie Street, Sydney. Drs. GOLDING and POZNIAK, U3 0268.



SERVICE for DOCTORS

Available in all Capital Cities of Australia and New Zealand.

REMARKABLE OPENING ON SOUTH COAST OF NEW SOUTH WALES.

A really first-class opposed solo practice in a large town near beaches with very good schools and happy cordial relations with the other practitioners. The average gross takings of £5000 per annum, with a goodwill of £2500, are most attractive. The hospital is a new one, very modern, and the vendor conducts some 55 midwifery cases in the year. He also advises that there is very good scope for surgery, medicine and midwifery.

The house is a real gem. Of most attractive design in brick, it is one and a half storeys, set in a very attractive garden, and the view is really excellent. Downstairs there is a very large lounge-dining room, kitchen, maid's room, laundry, entrance vestibule, waiting room, two surgeries and a laboratory, comprising some 1900 square feet. Upstairs there are three good-sized bedrooms with built-in cupboards and a very nice bathroom. This floor has an area of 600 square feet. The land is some 80' by 105'. There is a mortgage on the house which is repayable over some 14 years.

It is the type of practice which seldom appears with such a charming residence. Photographs of house and district are available.

For inspection and particulars, please contact our Mr. E. W. Holmes.

Particulars in Confidence.

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LICENSED REAL ESTATE AND BUSINESS AGENTS.

Watson House, Bligh Street, Sydney. Telephone: BW 4432.

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458 Ann Street, Brisbane. Telephone: B 1616.

DOCTOR'S DAUGHTER, commencing radiography course March, 1957, urgently desires position with radiologist, N.S.W. Reply No. 848, c.o. this office.

A LFRED HOSPITAL, COMMERCIAL RD., PRAHRAN, VICTORIA.

APPLICATIONS are invited from duly qualified medical practitioners and will be received by the undersigned until 21st January, 1957, for the following appointment:

Acting Honorary Physician to Out-Patients for a period of approximately eight months, with duties to commence forthwith.

All applications must be submitted on the prescribed form obtainable at the hospital.

Personal canvass will disqualify.

C. G. RANKIN, Manager. 10.12.56.

MEDICAL OFFICER, PAPUA.

APPLICATIONS are invited for the position of Medical Officer with an industrial organization working in Papua.

Experience in general practice desirable. Experience in tropical medicine is not necessary.

Age: Preferably approximately 30.

Salary: £2840 per annum on commencement.

Leave: Accrues as follows: during first year of service, 4 weeks per annum; during second year of service, 6 weeks per annum; during third year of service and thereafter, 8 weeks per annum.

Accommodation: Furnished bachelor quarters or married accommodation if required, with free family fares.

Qualifications: Applicant must hold degree accepted for registration in any State of the Commonwealth.

Taxation: Income derived by residents of Territory from sources within Territory is not taxable under Commonwealth legislation.

For further particulars apply air mail to BRITISH MEDICAL AGENCY, 11 Collins Street, Melbourne, Victoria. MF 5642.

MEDICAL PRACTICE FOR SALE.

Old-established eastern suburbs practice within five miles of G.P.O., Sydney. Close to beaches and sporting areas. Fine brick house with modern facilities. Size and nature of practice make it an excellent proposition for two men.

For particulars write to ACCOUNTANT, Box 18, P.O., North Sydney, N.S.W.

WOLLONGONG DISTRICT HOSPITAL, N.S.W.

HONORARY CONSULTANT UROLOGIST.

APPLICATIONS are invited for the above-mentioned appointment for the balance of a three-year term which expires on 31st March, 1959.

Application forms may be obtained from the undersigned and should be returned on or before Tuesday, 12th February, 1957.—A. E. KNOWLES, Secretary.

VICTORIA: Assistant with early view required. Prosperous Gippsland irrigated area. Two young principals with higher degrees. G.T. exceed £20,000. Major surgery at two small hospitals and base hospital. Salary £1875, plus car expenses, plus free house. One-third partnership at £3500 on easy terms. Reply No. 826, c.o. this office.

ASSISTANT WANTED by a group practice in an industrial area within 100 miles of Sydney, to commence in January. Income on a percentage basis with a guaranteed minimum of £1800 p.a. Liberal time off, car allowance, accommodation available, modern hospital. Reply No. 795, c.o. this office.

WANTED, a Locum for solo practice, progressive Queensland country town, for two months, April and May, 1957. Forty guineas a week. Car provided. Offer of assistantship if mutually satisfactory. Reply No. 837, c.o. this office.

CANBERRA HOSPITAL, AUSTRALIA CAPITAL TERRITORY.

APPLICATIONS are invited for the position of Resident Medical Officer. Salaries are according to experience and are at present less than one year £1017 p.a., one year £1377 p.a., two years £1622 p.a., three years £1692 p.a., in addition to accommodation.

Applications, stating age, qualifications, experience, date available and enclosing copies of references, to be forwarded to the Secretary, soon as possible.

BURNIE PUBLIC HOSPITAL, TASMANIA.

APPLICATIONS are invited for the position of Junior Resident Medical Officer.

Salary £1282 per annum, full residential emoluments.

This hospital has a casualty and O.P.D.

Further details will be supplied on application to JNO. S. C. BRIDGE, Secretary.

CAIRNS BASE HOSPITAL, CAIRNS, QUEENSLAND.

RESIDENT MEDICAL OFFICERS.

APPLICATIONS are invited for positions as Resident Medical Officers at the Cairns Base Hospital for 1957. Vacancies will exist January and March, 1957. medical staff comprises one superintendent, senior resident medical officer and five resident medical officers. Hospital of average 190. Active surgical Salary classification £1130-£1150 which includes northern allowances and basic wage adjustment to £1150. Commencing salary in accordance with previous experience. Board and accommodation is provided for single men and £100 per annum is paid in lieu to married men living out. Annual leave four weeks. Applications are required to advise the date when they can commence. Specialists in surgery, medical, orthopaedics, E.N.T., ophthalmology, dermatology and radium visit hospital at regular intervals. Thoracic annexe is attached with consultant specialist in permanent attendance. The hospital is equipped with a modern air-conditioned theatre block and provides an excellent training for Resident Medical Officers. Applicants state age, qualifications, experience and marital status, also enclosing copies of testimonials. Notice of termination of service one month on either side.

Applications close with the Secretary on Friday, 4th January, 1957.

WANTED, second-hand car. "Consider the Lillies" by Scougall and Franz Holford guineas. Reply No. 844, c.o. this office.

SYDNEY (eastern suburbs). Part-time assistant required night calls and week-ends few on average). £17 a week. Doctor doing post-graduate work. Reply No. 849, c.o. this office.

KINGS CROSS, DARLING HURST (SYDNEY). popular area. To let, ground floor two large rooms serviced furnished as desired as surgery waiting room. Newly redecorated house. Phone FA 1445 after 5 p.m. any day.

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PROLUTON DEPOT

New progestagen with protracted effect

Depot preparation with corpus luteum
hormone action

- reliable effect for 1 week
- a clear, oily solution - easy to inject
- excellent tolerance

INDICATIONS:

All cases which require a progesterone action for
at least one week or more, i.e.:

Abortion - Amenorrhoea - Functional bleeding

Ampoules of 1 cc. - 65 mg. Ampoules of 1 cc. - 125 mg

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